



INCIDENTAL HARASSMENT AUTHORIZATION

New Fortress Energy Louisiana FLNG, LLC and its designees are hereby authorized under section 101(a)(5)(D) of the Marine Mammal Protection Act (MMPA; 16 U.S.C. 1371(a)(5)(D)) to incidentally harass marine mammals, under the following conditions:

1. This incidental harassment authorization (IHA) is valid for one year from the date of issuance.
2. This IHA authorizes take incidental to construction of liquefied natural gas platforms off Grand Isle, Louisiana, as specified in the New Fortress Energy Louisiana FLNG, LLC's IHA application.
3. General Conditions
 - (a) A copy of this IHA must be in the possession of the Holder of the Authorization (Holder), supervisory construction personnel, lead protected species observers (PSOs), and any other relevant designees of the Holder operating under the authority of this IHA at all times that activities subject to this IHA are being conducted.
 - (b) The species and stocks authorized for taking are the Gulf of Mexico Western Coastal stock and the Northern Gulf of Mexico Continental Shelf stock of bottlenose dolphins (*Tursiops truncatus*). Authorized take, by Level B harassment only, is limited to 180 total takes from either stock.
 - (c) The taking by Level A harassment, serious injury or death of any of the species listed in condition (b) of this IHA or any taking of any other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this IHA. Any taking exceeding the authorized amounts listed in condition (b) of this IHA is prohibited and may result in the modification, suspension, or revocation of this IHA.



- (d) The Holder must ensure that construction supervisors and crews, the monitoring team, and relevant New Fortress Energy Louisiana FLNG, LLC staff are trained prior to the start of activities subject to this IHA, so that responsibilities, communication procedures, monitoring protocols, and operational procedures are clearly understood. New personnel joining during the project must be trained prior to commencing work.
- (e) The Holder will only commence pile driving during daylight hours no earlier than one hour after (civil) sunrise. Pile driving will not be initiated later than 1.5 hours before (civil) sunset. Pile driving may continue after dark when the installation of the same pile began during daylight hours (1.5 hours before (civil) sunset) and must proceed for human safety or installation feasibility reasons.
- (f) Pile driving will not be initiated in times of low visibility when the shutdown zone cannot be visually monitored, as determined by the lead PSO on duty.

4. Mitigation Requirements

- (a) The Holder must employ PSOs and establish monitoring locations as described in section 5 of this IHA. The Holder must monitor the project area to the maximum extent possible based on the required number of PSOs, required monitoring locations, and environmental conditions.
- (b) Monitoring must take place from 60 minutes prior to initiation of pile driving activity (*i.e.*, pre-start clearance monitoring) through 30 minutes post-completion of pile driving activity.
- (c) If a marine mammal is observed entering or within the shutdown zone (Table 2), pile driving activity must be delayed or halted. Pile driving must be commenced or resumed as described in condition 4(e) of this IHA.
- (d) Pre-start clearance monitoring must be conducted during periods of visibility sufficient for the lead PSO to determine that the shutdown zone is clear of marine mammals. Pile driving may commence following 30 minutes of observation when the determination is made that the shutdown zone is clear of marine mammals.
- (e) If pile driving is delayed or halted due to the presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily exited and been visually confirmed beyond the shutdown zone or 15 minutes have passed without re-detection of the animal.

- (f) The Holder must use ramp up techniques when impact pile driving with the maximum hammer energy limited to 60 percent. Ramp up requires an initial 30 minutes using a reduced energy. A ramp up must be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of 30 minutes or longer.
- (g) The Holder must use a bubble curtain during impact pile driving. The bubble curtain must be operated as necessary to achieve optimal performance. At a minimum, the Holder must adhere to the following performance standards:
 - (i) The bubble curtain must distribute air bubbles around 100 percent of the piling circumference for the full depth of the water column.
 - (ii) The (lowest) bubble ring must be in contact with the substrate for the full circumference of the ring, and the weights attached to the bottom ring shall ensure 100 percent substrate contact. No parts of the ring or other objects shall prevent full substrate contact.
 - (iii) Air flow to the bubblers must be balanced around the circumference of the pile with a minimum airflow rate of $0.3 \text{ m}^3/\text{min}\cdot\text{m}$.
- (h) Pile driving activity must be halted (as described in condition 4(c) of this IHA) upon observation of either a species for which incidental take is not authorized or a species for which incidental take has been authorized but the authorized number of takes has been met, entering or within the harassment zone.

5. Monitoring Requirements

- (a) Marine mammal monitoring must be conducted in accordance with the conditions in this section and this IHA.
- (b) Monitoring must be conducted by qualified, NMFS-approved PSOs, in accordance with the following conditions:
 - (i) PSOs must be independent of the activity contractor (for example, employed by a subcontractor) and have no other assigned tasks during monitoring periods.

- (ii) At least one PSO must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization.
 - (iii) Other PSOs may substitute other relevant experience, education (degree in biological science or related field), or training for prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization.
 - (iv) Where a team of three or more PSOs is required, a lead observer or monitoring coordinator must be designated. The lead observer must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization.
 - (v) PSOs must be approved by NMFS prior to beginning any activity subject to this IHA.
- (c) The Holder must establish two monitoring locations for all pile driving activities. A minimum of two PSOs must be assigned to the active pile driving vessel/platform, and a minimum of two PSOs must be assigned to a dedicated PSO vessel located at the best vantage point in order to observe and document marine mammal sightings in proximity to the harassment and shutdown zones.
 - (d) PSOs must record all observations of marine mammals, regardless of distance from the pile being driven, as well as the additional data indicated in section 6 of this IHA.

6. Reporting

- (a) The Holder must submit its draft report(s) on all monitoring conducted under this IHA within 90 calendar days of the completion of monitoring or 60 calendar days prior to the requested issuance of any subsequent IHA for construction activity at the same location, whichever comes first. A final report must be prepared and submitted within 30 calendar days following receipt of any NMFS comments on the draft report. If no comments are received from NMFS within 30 calendar days of receipt of the draft report, the report shall be considered final.
- (b) All draft and final monitoring reports must be submitted to *PR.ITP.MonitoringReports@noaa.gov* and *ITP.clevenstine@noaa.gov*.
- (c) The marine mammal report, at minimum, must include:

- (i) Dates and times (begin and end) of all marine mammal monitoring;
- (ii) Construction activities occurring during each daily observation period, including:
 - A. The number and type of piles that were driven and the method (*e.g.*, impact); and
 - B. Total number of strikes for each pile.
- (iii) PSO locations during marine mammal monitoring;
- (iv) Environmental conditions during monitoring periods (at beginning and end of PSO shift and whenever conditions change significantly), including Beaufort sea state and any other relevant weather conditions including cloud cover, fog, sun glare, and overall visibility to the horizon, and estimated observable distance;
- (v) Upon observation of a marine mammal, the following information:
 - A. Name of PSO who sighted the animal(s) and PSO location and activity at time of sighting;
 - B. Time of sighting;
 - C. Identification of the animal(s) (*e.g.*, genus/species, lowest possible taxonomic level, or unidentified), PSO confidence in identification, and the composition of the group if there is a mix of species;
 - D. Distance and location of each observed marine mammal relative to the pile being driven for each sighting;
 - E. Estimated number of animals (min/max/best estimate);
 - F. Estimated number of animals by cohort (adults, juveniles, neonates, group composition, etc.);
 - G. Animal's closest point of approach and estimated time spent within the harassment zone;

- H. Description of any marine mammal behavioral observations (*e.g.*, observed behaviors such as feeding or traveling), including an assessment of behavioral responses thought to have resulted from the activity (*e.g.*, no response or changes in behavioral state such as ceasing feeding, changing direction, flushing, or breaching);
- (vi) Number of marine mammals detected within the harassment zones, by species; and
- (vii) Detailed information about implementation of any mitigation (*e.g.*, shutdowns and delays), a description of specific actions that ensued, and resulting changes in behavior of the animal(s), if any.
- (d) The Holder must submit all PSO datasheets and/or raw sighting data with the draft report, as specified in condition 6(b) of this IHA.
- (e) Reporting injured or dead marine mammals:

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the Holder must report the incident to the Office of Protected Resources (OPR), NMFS (*PR.ITP.MonitoringReports@noaa.gov* and *ITP.clevenstine@noaa.gov*) and to the Southeast Region Marine Mammal Stranding Coordinator (*blair.mase@noaa.gov*, (305) 361-4586) as soon as feasible. If the death or injury was clearly caused by the specified activity, the Holder must immediately cease the activities until NMFS OPR is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of this IHA. The Holder must not resume their activities until notified by NMFS.

The report must include the following information:

- (i) Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);
- (ii) Species identification (if known) or description of the animal(s) involved;
- (iii) Condition of the animal(s) (including carcass condition if the animal is dead);
- (iv) Observed behaviors of the animal(s), if alive;

- (v) If available, photographs or video footage of the animal(s); and
- (vi) General circumstances under which the animal was discovered.

7. This Authorization may be modified, suspended or revoked if the Holder fails to abide by the conditions prescribed herein (including, but not limited to, failure to comply with monitoring or reporting requirements), or if NMFS determines: (1) the authorized taking is likely to have or is having more than a negligible impact on the species or stocks of affected marine mammals, or (2) the prescribed measures are likely not or are not effecting the least practicable adverse impact on the affected species or stocks and their habitat.

8. Renewals

On a case-by-case basis, NMFS may issue a one-time, one-year Renewal IHA following notice to the public providing an additional 15 days for public comments when (1) up to another year of identical, or nearly identical, activities (or a subset of those activities) are planned or (2) the specified activities will not be completed by the time the IHA expires and a Renewal would allow for completion of the activities, provided all of the following conditions are met:

- (a) A request for renewal is received no later than 60 days prior to the needed Renewal IHA effective date (note a Renewal IHA expiration date cannot extend beyond one year from expiration of this IHA).
- (b) The request for renewal must include the following:
 - (i) An explanation that the activities to be conducted under the requested Renewal IHA are identical to the activities analyzed for this IHA, are a subset of the activities, or include changes so minor (*e.g.*, reduction in pile size) that the changes do not affect the previous analyses, mitigation and monitoring requirements, or take estimates (with the exception of reducing the type or amount of take).
 - (ii) A preliminary monitoring report showing the results of the required monitoring to date and an explanation showing that the monitoring results do not indicate impacts of a scale or nature not previously analyzed or authorized.

- (c) Upon review of the request for Renewal, the status of the affected species or stocks, and any other pertinent information, NMFS determines that there are no more than minor changes in the activities, the mitigation and monitoring measures will remain the same and appropriate, and the findings made in support of this IHA remain valid.

Kimberly Damon-Randall,
Director, Office of Protected Resources
National Marine Fisheries Service

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Table 1. Authorized Incidental Take.

Common name	Scientific name	Stock	Level A harassment	Level B harassment
Common bottlenose dolphin	<i>Tursiops truncatus</i>	Northern Gulf of Mexico, Continental Shelf	0	180
		Gulf of Mexico, Western Coastal		

Table 2. Shutdown and Harassment Zones.

Pile size, type, and method	Shutdown zone	Harassment zone
180 in (2.743 m), steel, impact pile driving	500 m	1,603 m

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