



INCIDENTAL HARASSMENT AUTHORIZATION

Annova LNG Common Infrastructure, LLC (Annova) 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 pile driving and removal in the Brownsville Ship Channel, Texas, when adhering to the following terms and conditions.

1. This Incidental Harassment Authorization (IHA) is valid from March 1, 2021 to February 28, 2022.
2. This IHA is valid only for pile driving and removal associated with construction of the Annova LNG Terminal, Brownsville Ship Channel, Texas.
3. General Conditions
 - (a) A copy of this IHA must be in the possession of Annova, its designees, work crew personnel, and Protected Species Observers (PSOs) operating under the authority of this IHA.
 - (b) The species authorized for taking are bottlenose dolphins (*Tursiops truncatus*), Atlantic spotted dolphins (*Stenella frontalis*), and rough-toothed dolphins (*Steno bredanensis*).
 - (c) The taking, by Level B harassment, is limited to the species listed in condition 3(b). Table 1 provides the authorized number of takes per species and stock.
 - (d) The taking, by injury (Level A harassment), serious injury, or death of any of species listed in condition 3(b) of this IHA is prohibited.
 - (e) Any taking of marine mammal species not identified in condition 3(b) is prohibited.
4. Mitigation Measures

The holder of this IHA is required to implement the following mitigation measures:

 - (a) For in-water construction, if a marine mammal comes within 10 m, Annova must cease operations of heavy machinery activities other than pile driving (e.g., use



barge-mounted excavators, rock armoring, dredging) and reduce vessel speed to the minimum level required to maintain steerage and safe working conditions.

- (b) Annova is required to conduct briefings for construction supervisors and crews, the monitoring team, and Annova staff prior to the start of all pile driving activity, and when new personnel join the work, in order to explain responsibilities, communication procedures, the marine mammal monitoring protocol, and operational procedures.
- (c) Annova is required to employ a minimum of two protected species observers (PSOs) as described in section 5 of this IHA. In the case that 75 percent of the authorized take is met and two or more piles are left to be installed or removed to complete the project, an additional PSO must be positioned at the western edge of the Level B harassment zone.
- (d) Annova must establish shutdown zones of 20-meter (m) during 24-in pile driving and removal and 100 m during 96-in pile driving:
 - i. If a marine mammal is entering or is observed within the shutdown zone (Table 3), pile driving must be halted or delayed. Pile driving may not commence or resume until either the animal has voluntarily left and been visually confirmed beyond the shutdown zone or 15 minutes have passed without subsequent detections.
 - ii. Should environmental conditions deteriorate such that marine mammals within the entire shutdown zone would not be visible (e.g., fog, heavy rain), pile driving and removal must be delayed until the PSO is confident marine mammals within the shutdown zone could be detected.
- (e) Marine mammal monitoring must take place from 30 minutes prior to initiation of pile driving activity through 30 minutes post-completion of pile driving activity. Pile driving may commence when observers have declared the shutdown zone clear of marine mammals.
- (f) Annova must use soft start techniques when impact pile driving. Soft start requires contractors to provide an initial set of strikes at reduced energy, followed by a thirty-second waiting period, then two subsequent reduced energy strike sets. A soft start 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 thirty minutes or longer.

- (g) Annova is required to employ a double bubble curtain during all impact pile driving and operate it in a manner consistent with the following performance standards:
 - i. The bubble curtain must distribute air bubbles around 100 percent of the piling perimeter for the full depth of the water column.
 - ii. The lowest bubble ring must be in contact with the mudline for the full circumference of the ring, and the weights attached to the bottom ring shall ensure 100 percent mudline contact. No parts of the ring or other objects shall prevent full mudline contact.
 - iii. Air flow to the bubblers must be balanced around the circumference of the pile.
- (h) If a species for which authorization has not been granted, or a species for which authorization has been granted but the authorized takes are met, is observed approaching or within the monitoring zone (Table 2), pile driving and removal activities must shut down immediately using delay and shut-down procedures. Activities must not resume until the animal has been confirmed to have left the area or 15 minutes has elapsed without a subsequent sighting.

5. Monitoring Measures

The holder of this IHA is required to abide by the following marine mammal monitoring measures:

- (a) A minimum of two PSOs must be on-watch 30 minutes prior to pile driving, during all pile driving and removal, and 30 minutes post pile driving. One PSO must be located at the pile driving site and the other PSO must be located near the eastern edge of the Level B harassment zone. The PSOs may be positioned on boats, barges, docks, and/or land during both vibratory and impact in-water pile-driving activities.
- (b) Each PSO must be equipped with a range finder, binoculars, and marine mammal data sheets (paper or electronic).
- (c) Marine mammal monitoring during pile driving and removal must be conducted by NMFS-approved PSOs in a manner consistent with the following:
 - i. Independent PSOs (*i.e.*, not construction personnel) who have no other assigned tasks during monitoring periods must be used.

- ii. Other PSOs may substitute education (degree in biological science or related field) or training for experience.
- iii. Where a team of three or more PSOs are required, a lead observer or monitoring coordinator must be designated. The lead observer must have prior experience working as a marine mammal observer during construction.
- iv. Annova must submit PSO CVs for approval by NMFS prior to the onset of pile driving.

6. Reporting

The holder of this IHA is required to:

- (a) Submit a draft report on all monitoring conducted under the IHA within ninety calendar days of the completion of marine mammal monitoring or sixty days prior to the issuance of any subsequent IHA for this project, whichever comes first. A final report shall be prepared and submitted within thirty days following resolution of comments on the draft report from NMFS. This report must contain the following information:
 - i. Dates and times (begin and end) of all marine mammal monitoring.
 - ii. Construction activities occurring during each daily observation period, including how many and what type of piles were driven or removed and by what method (*i.e.*, impact or vibratory).
 - iii. Weather parameters and water conditions during each monitoring period (*e.g.*, wind speed, percent cover, visibility, sea state).
 - iv. The number of marine mammals observed (# of individuals and # of groups), by species, relative to the pile location and Level B harassment zone and if pile driving or removal was occurring at time of sighting.
 - v. Age and sex class, if possible, of all marine mammals observed.
 - vi. PSO locations during marine mammal monitoring.
 - vii. Distances and bearings of each marine mammal observed to the pile being driven or removed for each sighting (if pile driving or removal was occurring at time of sighting).
 - viii. Description of any marine mammal behavior patterns during observation, including direction of travel and estimated time spent within the Level A harassment and Level B harassment zones while the source was active.

- ix. Estimates of number of marine mammals taken, by species.
 - x. Detailed information about any implementation of any mitigation triggered (e.g., shutdowns and delays), a description of specific actions that ensued, and resulting behavior of the animal, if any.
 - xi. Description of attempts to distinguish between the number of individual animals taken and the number of incidences of take, such as ability to track groups or individuals.
 - xii. An extrapolation of the estimated takes by Level B harassment based on the number of observed exposures within the Level B harassment zone and the percentage of the Level B harassment zone that was not visible.
- (b) Submit all PSO datasheets and/or raw sighting data (in a separate file from the Final Report referenced immediately above).
- (c) Reporting Injured or Dead Marine Mammals

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the IHA-holder must immediately cease the specified activities and report the incident to the NMFS Southeast Marine Mammal Stranding Network (1-800-WHALE HELP; 1-800-942-5343) and Office of Protected Resources (301-427-8401) as soon as possible. If the death or injury was clearly caused by the specified activity, the IHA-holder must immediately cease the specified activities until NMFS 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 the IHA. The IHA-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 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.
8. Renewals - On a case-by-case basis, NMFS may issue a 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, or nearly identical, activities as described in the Specified Activities section of this notice is planned or (2) the activities as described in the Specified Activities section of this notice would not be completed by the time the IHA expires and a Renewal would allow for completion of the activities beyond that described in the Dates and Duration section of this notice, 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 (recognizing that the Renewal IHA expiration date cannot extend beyond one year from expiration of the initial 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 under the initial 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 in the initial IHA remain valid.

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

Date

Table 1. Authorized Amount of Taking, by Level B harassment, by species and stock.

Species	Stock	Level B Harassment Take
Bottlenose dolphin	Laguna Madre	62
	Western Gulf of Mexico Coastal	
Rough-toothed dolphin	N. Gulf of Mexico	14
Atlantic spotted dolphin	N. Guf of Mexico	26

Table 2. Level B Harassment Monitoring Zones.

Hammer Type	Pile Size (source level dB rms)	Isopleth distance (meters)¹
Impact	24-in	631
	96-in	3,415
Vibratory	24-in	10,000
	96-in	21,544

¹ All isopleths are truncated by land such that all Level B harassment areas are less than or equal to 1.0 km².

Table 3. Shutdown Zones

Hammer Type	Pile Size (source level dB rms)	Shutdown Zone (meters)
Impact	24-in	20
	96-in	100
Vibratory	24-in	20
	96-in	20

