

**REQUEST FOR LETTER OF AUTHORIZATION UNDER SECTION 101(a)
(5) (A) OF THE MARINE MAMMAL PROTECTION ACT INCIDENTAL
TO MINE NEUTRALIZATION TRAINING CONDUCTED WITH TIME-
DELAY FIRING DEVICES WITHIN THE VIRGINIA CAPES RANGE
COMPLEX**

**Submitted To:
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Office of Protected Resources
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June 2011

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(U) 1. DESCRIPTION OF ACTIVITIES

(U) Pursuant to the Marine Mammal Protection Act of 1972 (MMPA), this document is an application to the National Marine Fisheries Service (NMFS) for a Letter of Authorization (LOA)¹ for incidental harassment of marine mammals from U.S. Navy (Navy) mine neutralization training (MINEX) conducted with time-delay firing devices within the Virginia Capes (VACAPES) Range Complex.

(U) This LOA renewal is being sought to cover training through June 2012 to cover the taking of marine mammals, as described by the MMPA, incidental to MINEX training activities conducted with time-delay firing devices within the VACAPES Range Complex. The application for Letter of Authorization will not address activities designated for armed conflict or direct combat support operations, nor during periods of heightened national threat conditions, as determined by the President and Secretary of Defense or their duly designated alternatives or successors, as assisted by the Chairman of the Joint Chiefs of Staff.

(U) The table below shows the MMPA permit documentation applicable to the VACAPES Range Complex and NMFS’s authorization (**Table 1**). Information contained in these references provide a complete description of the background for the Navy’s request, overview of the VACAPES Range Complex, description of the specified activities, description of marine mammals in the area, discussion of potential effects or lack of effects of specified activities on marine mammals, mitigation, marine mammal monitoring, and associated reporting. The descriptions contained in these references have not changed, except as where noted in this application renewal.

(U) Table 1. Timeline of key VACAPES Range Complex MMPA documents

Timeline Date	From	Event	Reference
17 MAR 08	Navy	Letter Of Authorization Application (request for Incidental Harassment For VACAPES activities) received by NMFS Office of Protected Resources (subsequently revised on 10 April 2008)	DoN 2008a
10 APR 08	Navy	Revised Letter Of Authorization Application (request for Incidental Harassment For VACAPES activities) submitted via Federal Express to NMFS Office of Protected Resources	DoN 2008b
14 APR 08	NMFS	Notice of Receipt of Navy application published in the Federal Register (73 Fed. Reg. 20032): Taking of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Navy Training Operations Conducted within the Virginia Capes and Jacksonville Range Complexes	NMFS 2008a
24 JUL 08	Navy	First Addendum to Letter of Authorization Application submitted via email to NMFS Office of Protected Resources	DoN 2008c
7 NOV 08	Navy	Second Addendum to Letter of Authorization Application submitted via email to NMFS Office of Protected Resources	DoN 2008d
12 DEC 08	NMFS	Proposed Rule published in Federal Register (73 Fed. Reg. 75631): Taking and Importing Marine Mammals; U.S. Navy Training in the Virginia Capes Range Complex	NMFS 2008b
20 MAR 09	Navy	Final Virginia Capes Range Complex Environmental Impact Statement\Overseas Environmental Impact Statement published	DoN 2009
5 JUN 09 – 4 JUN 10	NMFS	Annual Letter of Authorization for taking marine mammals incidental to U.S Navy’s training on the VACAPES Range Complex issued 5 June 2009	NMFS 2009a

¹ under Section 101 (a)(5)(A) of the MMPA

15 JUN 09	NMFS	Final Rule published in Federal Register (74 Fed. Reg. 28328): Taking and Importing Marine Mammals; U.S. Navy Training in the Virginia Capes Range Complex	NMFS 2009b
5 FEB 10	Navy	Letter Of Authorization Application (request for Incidental Harassment For VACAPES activities) received by NMFS Office of Protected Resources	DoN 2010
5 JUN 10 – 4 JUN 11	NMFS	Annual Letter of Authorization for taking marine mammals incidental to U.S Navy’s training on the VACAPES Range Complex issued 3 June 2010	NMFS 2010
26 JAN 11	Navy	Letter Of Authorization Application (request for Incidental Harassment For VACAPES activities) received by NMFS Office of Protected Resources	DoN 2011
26 MAY 11	NMFS	Interim Final Rule published in Federal Register (76 Fed. Reg. 30552): Taking and Importing Marine Mammals: U.S. Navy Training in the Virginia Capes Range Complex and Jacksonville Range Complex	NMFS 2011a
5 JUN 11 – 4 JUN 12	NMFS	Annual Letter of Authorization for taking marine mammals incidental to U.S Navy’s training on the VACAPES Range Complex issued 1 June 2011	NMFS 2011b

(U) The following changes to the original authorization are requested for each year through the remainder of the 5-year MMPA authorization. All other training activities in the original authorization and not discussed below remain the same as described at 50 C.F.R. §218.1 and the 5 June 2011 LOA.

(U) Changes from Previous: MINEX (Mine Neutralization)

(U) Due to a 4 March 2011 mine neutralization training event that likely resulted in the death of 3 dolphins in Navy’s Silver Strand Training Complex, an evaluation of current mitigation measures has been conducted for mine neutralization events occurring within the VACAPES Range Complex. This Request for Letter of Authorization provides additional details on how mine neutralization is conducted, a description of current mitigation measures, and Navy’s proposed revisions to mitigation that will reduce the risk to marine mammals.

(U) Revised Description of MINEX Training

(U) Overall Operational Mission:

(U) Explosive Ordnance Disposal (EOD) personnel require realistic training before conducting high risk, real-world operations. Such real-world operations include those similar to recent world events requiring movement of assets from sea to land and back to sea. These real-world operations involve non-permissive environments (i.e., mine fields, enemy ships, aircraft, etc.) that require Sailors to carry out their mission undetected and with reduced risk. Proficiency in EOD training generally, and use of time-delay firing devices (TDFDs) specifically, is critical for ensuring the mission of a real-world operation is accomplished safely and Sailors return unharmed. Substitutes to using TDFDs are contradictory to realistic training and are inadequate at satisfying military readiness requirements.

(U) EOD personnel detect, identify, evaluate, neutralize, raise, tow, beach, and exploit mines. Neutralizing an influence mine (e.g., a mine that could be triggered by a magnetic, pressure, or acoustic signature) is an essential part of the EOD Mine Countermeasures (MCM) mission. Neutralization ensures the safety of the men and women of EOD in the recovery and exploitation phase of an influence mine. The EOD mission is typically to locate, neutralize, recover, and exploit mines after they are initially

located by another source, such as a MCM or Mine Hunting Class (MHC) ship or an MH-53 or MH-60 helicopter. Once the mine shapes are located, EOD divers are deployed to further evaluate and “neutralize” the mine.

(U) During a mine neutralization exercise, if the mine is located on the water’s surface, then EOD divers are deployed via helicopter. If the mine is located at depth, then EOD divers are deployed via small boat. The neutralization of mines in the water is normally executed with an explosive device and may involve detonation of up to 20 pounds net explosive weight of explosives. The charge is set with a TDFD since this is the method of detonating the charge in a real-world event.

(U) TDFDs are the safest and most operationally sound method of initiating a demolition charge on a floating mine or mine at depth. TDFDs are used because of their ease of employment, light weight, low magnetic signature, they are HERO² safe, and they completely eliminate the need to re-deploy swimmers from a helicopter to recover equipment used with positive control firing devices. The TDFD also allows EOD personnel to make their way outside of the detonation plume radius/human safety buffer zone.

(U) By using electronic devices as an alternative to a TDFD, such as positive control devices, additional metal is unnecessarily introduced into an influence ordnance operating environment. While positive control devices do allow for instantaneous detonation of the charge, they introduce operationally unsound tactics, thereby increasing risks to the dive team. It is essential that the platoons train like they operate by using TDFDs. In a live mine field, MCM platoons expect there to be additional risks, such as unknown mines with different types of influence firing circuits that can be in close proximity to the mine they are prosecuting. The use of a TDFD reduces these risks by limiting the possibility of unintentionally triggering the influence firing circuits.

(U) A Radio Firing Device (RFD), a type of positive control device, can be used to initiate the charge on a bottom mine, but it is not normally used as a primary firing device due to HERO concerns of the electric detonator, Operational Risk Management (ORM) (i.e., safety) considerations, and established tactical procedures; therefore, they are not considered a practicable alternative.

(U) Adding a positive control firing device to a TDFD as a primary means of detonation is not practicable due to ORM considerations. It is not sound ORM or good demolition practice to combine different firing circuits to a demolition charge. In an open ocean environment this practice would greatly increase the risk of misfire by putting unnecessary stress on all the needed connections and devices (600 - 1000’ of firing wire, an improvised, bulky, floating system for the RFD receiver, 180’ of detonating cord, and 10’ TDFD). Underwater demolition needs to be kept as simple and streamlined as possible, especially when divers and influence ordnance are added to the equation. ORM must ensure the safety of Sailors conducting these high risk training evolutions in addition to protection of marine life.

(U) Basic Training Description:

(U) Basic training involves neutralizing either a simulated mine on the surface or at depth. The ratio between surface detonations and bottom detonations (at depth) for EOD is about 50/50. This is dependent mainly on range availability and weather conditions. During neutralization of a surface mine, EOD divers are deployed and retrieved via helicopter. However, when helicopter assets are unavailable, a small boat is used as is done with neutralization of a mine at depth. During training exercises, regardless of whether a helicopter or small boat is used, a minimum of two small boats participate in the exercise.

² Hazards of Electromagnetic Radiation to Ordnance (HERO). The high intensity radio frequency fields produced by modern radio and radar transmitting equipment can cause sensitive electroexplosive devices contained in ordnance systems to actuate prematurely.

(U) For a surface mine neutralization training event involving a helicopter or a boat, the minimum time-delay that is reasonable for EOD divers to make their way outside of the detonation plume radius/human safety buffer zone (typically 1000 ft (334 yd)) is 10 min. For mine neutralization training events at depth using small boats, the time-delay can be minimized to 5 min. However, this would require the instructors to handle initiation of the detonation and therefore would result in decreased training value for students.

(U) The range area and associated support equipment are required for a 6 - 8 hour window. Training exercises are conducted during daylight hours for safety reasons.

(U) MINEX Authorization Change Request

(U) The Navy is proposing to conduct MINEX activities using time-delay firing devices (TDFDs). The number of MINEX events would remain unchanged from the 2011 Request for Letter of Authorization (DoN 2011).

(U) 2. LOCATION AND DEFINITION OF EXPLOSION ACTIVITIES

(U) There are no changes to Chapter 2 as described under NMFS June 2009 Final Rule (NMFS 2009b), Navy's 2011 Request for Letter of Authorization (DoN 2011), and NMFS subsequent 2011 Letter of Authorization (NMFS 2011b).

(U) 3. MARINE MAMMAL SPECIES AND NUMBERS OCCURRING IN THE VIRGINIA CAPES STUDY AREA

(U) There are no changes to Chapter 3 as described under NMFS June 2009 Final Rule (NMFS 2009b), Navy's 2011 Request for Letter of Authorization (DoN 2011), and NMFS subsequent 2011 Letter of Authorization (NMFS 2011b).

(U) 4. AFFECTED SPECIES STATUS AND DISTRIBUTION

(U) There are no changes to Chapter 4 as described under NMFS June 2009 Final Rule (NMFS 2009b), Navy's 2011 Request for Letter of Authorization (DoN 2011), and NMFS subsequent 2011 Letter of Authorization (NMFS 2011b).

(U) 5. TAKE AUTHORIZATION REQUESTED

(U) There are no changes to Chapter 5 as described under NMFS June 2009 Final Rule (NMFS 2009b), Navy's 2011 Request for Letter of Authorization (DoN 2011), and NMFS subsequent 2011 Letter of Authorization (NMFS 2011b).

(U) 6. NUMBERS AND SPECIES TAKEN

(U) There are no changes to Chapter 6 as described under Navy's 2011 Request for Letter of Authorization (DoN 2011), and NMFS subsequent 2011 Letter of Authorization (NMFS 2011b).

(U) As part of the Navy's 2011 Request for Letter of Authorization (DoN 2011), revisions to the estimated number and species that could potentially be exposed during MINEX training events were requested. The estimated exposures are based on the probability of the animals occurring in the area when a training event is occurring, and this probability does not change based on the use of TDFDs or implementation of mitigation measures (i.e., the exposure model does not account for how the charge is initiated and assumes no mitigation is being implemented). Therefore, the Navy is not requesting a change to the take authorization and the modeling results presented in the Navy's 2011 Request for Letter of Authorization (DoN 2011) remain applicable.

(U) 7. IMPACTS TO MARINE MAMMAL SPECIES OR STOCKS

(U) There are no changes to Chapter 7 as described under NMFS June 2009 Final Rule (NMFS 2009b), Navy's 2011 Request for Letter of Authorization (DoN 2011), and NMFS subsequent 2011 Letter of Authorization (NMFS 2011b).

(U) 8. IMPACTS ON SUBSISTENCE USE

(U) There are no changes to Chapter 8 as described under NMFS June 2009 Final Rule (NMFS 2009b), Navy's 2011 Request for Letter of Authorization (DoN 2011), and NMFS subsequent 2011 Letter of Authorization (NMFS 2011b).

(U) 9. IMPACTS TO MARINE MAMMAL HABITAT AND RESTORATION LIKELIHOOD

(U) There are no changes to Chapter 9 as described under NMFS June 2009 Final Rule (NMFS 2009b), Navy's 2011 Request for Letter of Authorization (DoN 2011), and NMFS subsequent 2011 Letter of Authorization (NMFS 2011b).

(U) 10. IMPACTS TO MARINE MAMMALS FROM LOSS OR MODIFICATION OF HABITAT

(U) There are no changes to Chapter 10 as described under NMFS June 2009 Final Rule (NMFS 2009b), Navy's 2011 Request for Letter of Authorization (DoN 2011), and NMFS subsequent 2011 Letter of Authorization (NMFS 2011b).

(U) 11. MITIGATION MEASURES

(U) Current Mitigations: Mine Neutralization Training Involving Underwater Detonations (up to 20-lb charges):

(A) This activity shall only occur in W -50 of the VACAPES Range Complex.

(B) Observers shall survey the Zone of Influence (ZOI), a 700 yd (640 m) radius from detonation location for marine mammals from all participating vessels during the entire operation. A survey of the ZOI (minimum of 3 parallel tracklines 219 yd [200 m] apart) using support craft shall be conducted at the detonation location 30 minutes prior through 30 minutes post detonation. Aerial survey support shall be utilized whenever assets are available.

(C) Detonation operations shall be conducted during daylight hours only.

(D) If a marine mammal is sighted within the ZOI, the animal shall be allowed to leave of its own volition. The Navy shall suspend detonation exercises and ensure the area is clear of marine mammals for a full 30 minutes prior to detonation.

(E) No detonation shall be conducted using time-delay devices.

(F) Divers placing the charges on mines and dive support vessel personnel shall survey the area for marine mammals and shall report any sightings to the surface observers. These animals shall be allowed to leave of their own volition and the ZOI shall be clear of marine mammals for 30 minutes prior to detonation.

(G) No detonations shall take place within 3.2 nm (6 km) of an estuarine inlet (e.g., Chesapeake Bay Inlets).

(H) No detonations shall take place within 1.6 nm (3 km) of shoreline.

(I) Personnel shall record any protected species observations during the exercise as well as measures taken if species are detected within the ZOI.

(U) Revised Mitigations: Mine Neutralization Training Involving Underwater Detonations (up to 20-lb charges):

(U) The current mitigation measures prohibit the use of TDFDs when conducting mine neutralization events and are therefore not practicable from a military readiness perspective for the reasons described in Chapter 1. The following revisions to selected measures will minimize the risk of injury and mortality to marine mammals during the use of TDFDs.

(U) The following recommended procedures are specific to exercises conducted within the VACAPES Range Complex. Exercises conducted in other Navy range complexes may require adjusting procedures, sizes of buffer zones, duration of time-delays, etc. to ensure practicability of implementation and effectiveness at minimizing injury and mortality of marine mammals.

(U) Measure A: This activity shall only occur in W -50 of the VACAPES Range Complex

No change to this measure.

(U) Measure B: Visual Observation and Buffer Zone

(U) As discussed in Chapter 6, the estimated potential for marine mammals to be exposed during MINEX training events does not change with the use of TDFDs. This is due to the fact that estimated exposures are based on the probability of the animals occurring in the area when a training event is occurring, and this probability does not change because of a time-delay. However, what does change is the potential effectiveness of the current mitigation that is implemented to reduce the risk of exposure.

(U) The locations within W-50 in which training with TDFDs most often takes place are close to shore (~3-6 nm) and in shallow water (~10-20 m depth). As part of the annual LOA requirements, the Navy has conducted monitoring in this area during three training events over the past two years and only bottlenose dolphins and unidentified dolphins have been sighted. Based on the training location, description of the area, and data from recent monitoring surveys, large whales and species that prefer deep or offshore waters are not expected to occur in this area with any regularity. Based on the fact that delphinids (mainly bottlenose dolphins) are the most likely species to be encountered in this region, the buffer zones need to be revised to further reduce potential impacts to this group when using a TDFD. However, mitigation measures apply to all species and will be implemented if any marine mammal species is sighted.

(U) Pursuant to the NMFS 2011 Letter of Authorization (NMFS 2011), the Navy currently has authorization for 2 bottlenose dolphins Level B exposures, 2 Clymene dolphin Level B exposures, 4 pantropical spotted dolphins Level B exposures, and 1 pantropical spotted dolphin Level A exposure. Since the Navy does not currently have authorization for any Level A exposures to other delphinid species (especially bottlenose dolphins), the buffer zone needs to be revised to more effectively mitigate any potential exposures within the Level A zone. Therefore, the objective of Navy's revised mitigation measures will be to further minimize the risk of marine mammal exposure within the injury zones (Level A harassment) for 5 lb, 10 lb, and 20 lb charges. Since the injury zone is larger than the zone where mortality could potentially occur, the revised mitigation will also reduce the risk of mortality.

(U) To increase the effectiveness of the current buffer zone for time-delayed detonations, the buffer zone needs to take into account the distance that a marine mammal could potentially travel during the time-delay. Using an average swim speed of 3 knots (102 yd/min) for a delphinid, the approximate distance that an animal would typically travel within a given time-delay period can be calculated (**Table 2**). Based on acoustic propagation modeling conducted as part of the VACAPES EIS/OEIS, there is potential for injury to a marine mammal within 106 yd of a 5 lb detonation, 163 yd of a 10 lb detonation, and 222 yd of a 20 lb detonation. Based on the distances provided in Table 2, revised buffer zones can be calculated for 5 lb, 10 lb, and 20 lb charges by adding the distance traveled for a specific time-delay to the distance of the injury zone for each size charge (**Table 3**). As long as animals are not observed within the buffer zones before the time-delay detonation is set, then the animals would be unlikely to swim into the injury zone from outside the area within the time-delay window.

(U) The current buffer zone is 700 yd for use of positive control devices, and includes the estimated zone for potential TTS exposure (552 yd for up to 20 lb). The 700 yd buffer zone will continue to be used for events using a positive control device. However, when TDFDs are used, the revised buffer zones are specific to the size of the charge and the potential time-delay used and may be smaller than the original 700 yd buffer zone when using a short time-delay (**Table 3**).

(U) Table 2. Potential Distance Traveled Based on Swim Speed and Length of Time-Delay.

Species Group	Swim Speed	Time-delay	Potential Distance Traveled
Delphinid	102 yd/min	5 min	510 yd
		6 min	612 yd
		7 min	714 yd
		8 min	816 yd
		9 min	918 yd
		10 min	1,020 yd

(U) Table 3. Buffer Zone Radius (yd) for TDFDs Based on Size of Charge and Length of Time-Delay.

		Time-Delay					
		5 min	6 min	7 min	8 min	9 min	10 min
Charge Size	5 lb*	616 yd	718 yd	820 yd	922 yd	1024 yd	1126 yd
	10 lb*	673 yd	775 yd	877 yd	979 yd	1081 yd	1183 yd
	20 lb*	732 yd	834 yd	936 yd	1038 yd	1140 yd	1242 yd

*Values are calculated by adding potential distance traveled based on time-delay from Table 2 to the injury zone for each size charge (5 lb = 106 yd, 10 lb = 163 yd, and 20 lb = 222 yd).

(U) The current mitigation measure specifies that parallel tracklines will be surveyed at equal distances apart to cover the buffer zone. Considering that the buffer zone for protection of a delphinid may be larger than specified in the current mitigation, a more effective and practicable method for surveying the buffer zone is for the survey boats to position themselves near the mid-point of the buffer zone radius (but always outside the detonation plume radius/human safety zone) and travel in a circular pattern around the detonation location surveying both the inner (toward detonation site) and outer (away from detonation site) areas of the buffer zone, with one observer looking inward toward the detonation site and the other observer looking outward. When using 2 boats, each boat will be positioned on opposite sides of the detonation location, separated by 180 degrees. When using more than 2 boats, each boat will be positioned equidistant from one another (120 degrees separation for 3 boats, 90 degrees separation for 4 boats, etc.). Helicopters will travel in a circular pattern around the detonation location when used.

(U) During mine neutralization exercises involving surface detonations, a helicopter deploys personnel into the water to neutralize the simulated mine. The helicopter will be used to search for any marine mammals within the buffer zone. Use of additional Navy aircraft beyond those participating in the exercise was evaluated. Due to the limited availability of Navy aircraft and logistical constraints, the use of additional Navy aircraft beyond those participating directly in the exercise was deemed impracticable. A primary logistical constraint includes coordinating the timing of the detonation with the availability of the aircraft at the exercise location. Exercises typically last most of the day and would require an aircraft to be dedicated to the event for the entire day to ensure proper survey of the buffer zone 30 minutes prior to and after the detonation. The timing of the detonation may often shift throughout the day due to training tempo and other factors, further complicating coordination with the aircraft.

(U) Revised mitigation measure:

(U) A buffer zone around the detonation site will be established to survey for marine mammals. Events using positive detonation control will use a 700 yd radius buffer zone. Events using time-delay firing devices will use the table below to determine the radius of the buffer zone. Time-delays longer than 10 minutes will not be used. A minimum of 2 boats will be used to survey for marine mammals. Buffer zones of 1,000 yds radius or greater shall use 3 boats OR 1 helicopter and 2 boats to conduct surveys for marine mammals. Two dedicated observers in each of the boats will conduct continuous visual survey of the buffer zone for marine mammals for the entire duration of the training event. The buffer zone will be surveyed from 30 minutes prior to the detonation and for 30 minutes after the detonation. Other personnel besides the observers can also maintain situational awareness on the presence of marine mammals within the buffer zone to the best extent practical given dive safety considerations. If available, aerial visual survey support from Navy helicopters can be utilized, so long as to not jeopardize safety of flight.

(U) When conducting the survey, boats will position themselves near the mid-point of the buffer zone radius (but always outside the detonation plume radius/human safety zone) and travel in a circular pattern around the detonation location surveying both the inner (toward detonation site) and outer (away from detonation site) areas of the buffer zone. When using 2 boats, each boat will be positioned on opposite sides of the detonation location, separated by 180 degrees. When using more than 2 boats, each boat will be positioned equidistant from one another (120 degrees separation for 3 boats, 90 degrees separation for 4 boats, etc.). Helicopters will travel in a circular pattern around the detonation location when used.

Buffer Zone Radius (yd) for TDFDs Based on Size of Charge and Length of Time-Delay.

		Time-Delay					
		5 min	6 min	7 min	8 min	9 min	10 min
Charge Size	5 lb	616 yd	718 yd	820 yd	922 yd	1024 yd	1126 yd
	10 lb	673 yd	775 yd	877 yd	979 yd	1081 yd	1183 yd
	20 lb	732 yd	834 yd	936 yd	1038 yd	1140 yd	1242 yd

(U) Measure C: Training During Daylight Hours Only

(U) The Navy recommends revising this measure, but clarifying that it is for training and not operations (i.e., real-world events).

(U) Revised mitigation measure:

Training shall be conducted during daylight hours only.

(U) Measure D: Maintaining Buffer Zone for 30 Minutes Prior to Detonation and suspension of detonation

(U) Visually observing the mitigation buffer zone for 30 min prior to the detonation allows for any animals that may have been submerged in the area to surface and therefore be observed so that mitigation can be implemented. Based on average dive times for the species groups that are most likely expected to

occur in the areas where mine neutralization training events take place, (i.e. delphinids), 30 minutes is an adequate time period to allow for submerged animals to surface. Allowing a marine mammal to leave of their own volition if sighted in the mitigation buffer zone is necessary to avoid harassment of the animal. Navy recommends maintaining this portion of the measure as written.

(U) Suspending the detonation after a TDFD is initiated is not possible due to safety risks to personnel. Therefore the portion of the measure that requires suspension of the detonation cannot be implemented when using a TDFD and should be removed, noting that revised mitigation measures will make it unnecessary to have to suspend detonation within the maximum of ten minutes between setting the TDFD and detonation.

(U) Revised mitigation measure:

(U) If a marine mammal is sighted within the buffer zone, the animal will be allowed to leave of its own volition. The Navy will suspend detonation exercises and ensure the area is clear for a full 30 minutes prior to detonation.

(U) When required to meet training criteria, time-delay firing devices with up to a 10 minute delay may be used. The initiation of the device will not start until the area is clear for a full 30 minutes prior to initiation of the timer.

(U) Measure E: No detonation shall be conducted using time-delay devices.

(U) The Navy recommends deleting this measure as it reduces military readiness and is not practicable.

(U) The availability of additional technological solutions that would enable suspension of the detonation when using a TDFD was evaluated. Currently there are no devices that would stop the timer if a marine mammal was sighted within the buffer zone after initiation of the timer.

(U) Procurement of new technology can take many years to be fielded. Joint service procurement can take approximately 3 years, with an additional 6 months when an item needs to go through the WSESRB (Weapon System Explosive Safety Review Board). For example, the Acoustic Firing System (AFS) has been in development for 10 years. It is supposed to be fielded “as is” to the Fleet in 2011, with the understanding that it has not met the minimum standards put forth. Once fielded, it will remain in the Product Improvement Process (PIP), which can take up to five years to have a finished product. This AFS will not be considered a true positive control firing device because current technology prevents a shorter time-delay than one minute in the firing cycle.

(U) In 2012 another Radio Firing Device (RFD) will be fielded to the Fleet through a new program called the Special Mission Support Program. This RFD has a disposable receiver that can function in an Electronic Counter Measure (ECM) environment. Navy will evaluate and consider the use of the AFS and the new RFD for potential use as mitigation once they are fielded, but currently they are not options that can be implemented.

(U) Measure F: Diver and Support Vessel Surveys

(U) The Navy recommends revising this measure to clarify that it applies to divers only. The intent of the measure is for divers to observe the immediate, underwater area around the detonation site for marine mammals while placing the charge.

(U) Revised mitigation measure:

(U) Divers placing the charges on mines will observe the immediate, underwater area around the detonation site for marine mammals and will report any sightings to the surface observers.

(U) Measure G: Proximity to Estuarine Inlet

(U) No change to this measure.

(U) Measure H: Proximity to Shoreline

(U) No change to this measure.

(U) Measure I: Reporting

(U) No change to this measure.

(U) Summary of revised **mitigation** measures:

A. (U) This activity will only occur in W -50 of the VACAPES Range Complex.

B. (U) A buffer zone around the detonation site will be established to survey for marine mammals. Events using positive detonation control will use a 700 yd radius buffer zone. Events using time-delay firing devices will use the table below to determine the radius of the buffer zone. Time-delays longer than 10 minutes will not be used. A minimum of 2 boats will be used to survey for marine mammals. Buffer zones of 1,000 yds radius or greater shall use 3 boats OR 1 helicopter and 2 boats to conduct surveys for marine mammals. Two dedicated observers in each of the boats will conduct continuous visual survey of the buffer zone for marine mammals for the entire duration of the training event. The buffer zone will be surveyed from 30 minutes prior to the detonation and for 30 minutes after the detonation. Other personnel besides the observers can also maintain situational awareness on the presence of marine mammals within the buffer zone to the best extent practical given dive safety considerations. If available, aerial visual survey support from Navy helicopters can be utilized, so long as to not jeopardize safety of flight.

(U) When conducting the survey, boats will position themselves near the mid-point of the buffer zone radius (but always outside the detonation plume radius/human safety zone) and travel in a circular pattern around the detonation location surveying both the inner (toward detonation site) and outer (away from detonation site) areas of the buffer zone. When using 2 boats, each boat will be positioned on opposite sides of the detonation location, separated by 180 degrees. When using more than 2 boats, each boat will be positioned equidistant from one another (120 degrees separation for 3 boats, 90 degrees separation for 4 boats, etc.). Helicopters will travel in a circular pattern around the detonation location when used.

Buffer Zone Radius for TDFDs Based on Size of Charge and Length of Time-Delay.

		Time-Delay					
		5 min	6 min	7 min	8 min	9 min	10 min
Charge Size	5 lb	616 yd	718 yd	820 yd	922 yd	1024 yd	1126 yd
	10 lb	673 yd	775 yd	877 yd	979 yd	1081 yd	1183 yd
	20 lb	732 yd	834 yd	936 yd	1038 yd	1140 yd	1242 yd

C. (U) Training will be conducted during daylight hours only.

D. (U) If a marine mammal is sighted within the buffer zone, the animal will be allowed to leave of its own volition. The Navy will suspend detonation exercises and ensure the area is clear for a full 30 minutes prior to detonation.

(U) When required to meet training criteria, time-delay firing devices with up to a 10 minute delay may be used. The initiation of the device will not start until the area is clear for a full 30 minutes prior to initiation of the timer.

E. (U) Divers placing the charges on mines will observe the immediate, underwater area around the detonation site for marine mammals and will report any sightings to the surface observers.

F. (U) No detonations will take place within 3.2 nm (6 km) of an estuarine inlet (e.g., Chesapeake Bay Inlets).

G. (U) No detonations will take place within 1.6 nm (3 km) of shoreline.

H. (U) Personnel will record any protected species observations during the exercise as well as measures taken if species are detected within the buffer zone.

(U) 12. MINIMIZATION OF ADVERSE EFFECTS ON SUBSISTENCE USE

(U) There are no changes to Chapter 12 as described under NMFS June 2009 Final Rule (NMFS 2009b), Navy's 2011 Request for Letter of Authorization (DoN 2011), and NMFS subsequent 2011 Letter of Authorization (NMFS 2011b).

(U) 13. MONITORING AND REPORTING MEASURES

(U) There are no changes to Chapter 13 as described under NMFS June 2009 Final Rule (NMFS 2009b), Navy's 2011 Request for Letter of Authorization (DoN 2011), and NMFS subsequent 2011 Letter of Authorization (NMFS 2011b).

(U) 14. RESEARCH EFFORTS

(U) There are no changes to Chapter 14 as described under NMFS June 2009 Final Rule (NMFS 2009b), Navy's 2011 Request for Letter of Authorization (DoN 2011), and NMFS subsequent 2011 Letter of Authorization (NMFS 2011b).

(U) 15. LIST OF PREPARERS

(U) There are no changes to Chapter 15 as described under NMFS June 2009 Final Rule (NMFS 2009b), Navy's 2011 Request for Letter of Authorization (DoN 2011), and NMFS subsequent 2011 Letter of Authorization (NMFS 2011b).

(U) This Letter of Authorization Renewal Application was prepared for the Department of the Navy by Naval Facilities Engineering Command (NAVFAC) Atlantic. A list of key preparation and review personnel is included:

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(U) 16. LITERATURE CITED

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(U) NMFS. 2011b. Annual Letter of Authorization for taking of marine mammals incidental to U.S. Navy training activities conducted in the VACAPES Range Complex. June 1, 2011