

Portable Closed Detonation Chamber

VIEQUES ENVIRONMENTAL RESTORATION PROGRAM **FACT SHEET**



As required by the FY20 National Defense Authorization Act (NDAA), the Navy is operating a portable closed detonation chamber on Vieques Island, Puerto Rico. The chamber has the explosives capacity needed to destroy the Unexploded Ordnance (UXO) that can be brought to it safely, with minimal handling by site workers. However, the vast majority of UXO on Vieques are located in remote, rugged areas of the island, and transport of these items to the chamber would expose site workers to the very real danger of being injured or killed in an accidental explosion. Therefore, the chamber is not a safe option for the vast majority of UXO items on Vieques. Instead, these items will continue to be destroyed by open detonation, which is performed in remote areas of the island, in a manner that is safe for site workers and protective of human health and the environment.

What does the federal law require?

The 2020 National Defense Authorization Act (Public Law 116-92) directed the Navy to "...purchase and operate a portable closed detonation chamber and water jet cutting system..." to be used in the cleanup of the former Navy training areas on Vieques. The law authorized \$10 million for this purpose. In accordance with the law, the Navy purchased these items in 2021, and operation of both the chamber and the water jet began in 2022.

What detonation chamber was purchased for Vieques?

After considering the available options, the Navy purchased an ARC 9 GT Total Containment Vessel made by NABCO Systems, LLC, a company with 30 years of experience in the manufacture of detonation chambers used in emergency response by federal, state, and local law enforcement agencies and all branches of the US military. The ARC 9 is designed to contain up to 20 pounds of explosives in a detonation. The Navy selected the ARC 9 because it has a proven record for safety, explosives capacity, and effectiveness, indicating it would be the best portable detonation chamber for the work on Vieques.



ARC 9 GT Total Containment Vessel

What about the T-10 chamber?

At previous Vieques public meetings, the Navy, the US Environmental Protection Agency (USEPA), and the Puerto Rico Environmental Quality Board (PREQB) have presented detailed information on the T-10 Transportable Donovan Blast Chamber, with the understanding that it is the largest chamber that could potentially be brought to Vieques. The T-10 chamber has a maximum capacity of 13 pounds of explosives, which is 7 pounds less than the design capacity of the ARC 9 chamber. Furthermore, the T-10 is no longer commercially available, and the manufacturer has gone out of business. The US Army currently owns the only T-10 chambers in existence, but they have not been used in many years and would require significant repairs. It is not clear that the repaired units would meet current safety requirements. For these reasons, the Navy did not acquire a T-10 chamber.

What explosives safety approvals were required?

In order to use the ARC 9 chamber for destruction of unexploded ordnance (UXO) on Vieques, the Navy had to obtain safety approvals from the Naval Ordnance Safety and Security Activity (NOSSA) and the Department of Defense Explosives Safety Board (DDESB). On January 27, 2022, NOSSA provided interim approval, and on April 21, 2022, DDESB gave final approval to operate the ARC 9 chamber with a maximum capacity of 10 pounds of explosives. While this is less than the design capacity of 20 pounds, it is still close to the 13-pound capacity of the T-10 chamber, and it provides the capacity needed for the munitions on Vieques that can be brought safely to the chamber. The NOSSA and DDESB decision was based on explosives safety considerations.

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How is the ARC 9 chamber being used on Vieques?

The Navy is using the ARC 9 chamber to destroy small projectiles and bomb dummy units (BDUs). Operation of the ARC 9 began in 2022 and will continue for many years. Due to the need for strict safety procedures, structural inspections, daily setup, frequent removal of ash and debris, and proper handling of the waste, the operation of the chamber is a complex, labor intensive, and time-consuming process.

What are the Unexploded Ordnance (UXO) safety concerns?

The Vieques cleanup involves enormous amounts of UXO, and these items are especially dangerous because they have been fused and fired, but somehow failed to explode as expected. As a result, they are set to explode and may do so without warning. In order to avoid an accidental explosion, the safest approach to UXO cleanup always involves the least amount of handling. In fact, some types of UXO are so dangerous they should not be moved at all, or even touched. In order to protect the lives of Vieques site workers, the ARC 9 chamber is only being used to destroy UXO that can be brought to it with minimal handling, using methods that are approved and deemed safe by UXO experts on site.

The UXO items on Vieques are typically located in remote, rugged areas of the island. In order to reach the chamber, these items would require excessive handling and transport across difficult terrain and unimproved roads, thereby exposing site workers to the very real danger of being injured or killed in an accidental explosion. Due to the remote and rugged site conditions, the vast majority of UXO on Vieques cannot be delivered safely for destruction in the ARC 9 chamber. Instead, these items must continue to be destroyed by open detonation, which is conducted in remote areas of the island in a manner that is safe for site workers and protective of public health and the environment. This approach to UXO worker safety is

supported by NOSSA and DDESB requirements, UXO industry standards, and the professional judgement of UXO experts, including those who work for Navy, USEPA, and PREQB.

What other sites use a detonation chamber?

Currently, Vieques is the only munitions response site where the US Department of Defense (including Navy, Army, Air Force, and Marine Corps) is using a detonation chamber for destruction of UXO. As a general rule, detonation chambers are not used for routine or large scale destruction of UXO because of the inherent dangers in handling, transporting, and storing UXO.

How will the detonation chamber affect public health on Vieques?

The use of the ARC 9 chamber will not affect public health on Vieques because the current process of open detonation is already protective of human health and the environment. Since 2005, the Navy has demonstrated protectiveness by analyzing thousands of air, water, and soil samples, and the Navy results have been confirmed by federal and commonwealth regulatory agencies, including the PR Department of Natural and Environmental Resources (PRDNER), the PREQB, the USEPA, the US Nuclear Regulatory Commission (NRC), and the US Agency for Toxic Substances and Disease Registry (ATSDR).

How will the detonation chamber affect public safety on Vieques?

The operation of the ARC 9 chamber is a complex, labor intensive, and time-consuming process that interrupts the ongoing work of investigating and clearing munitions from the former Navy areas. These interruptions will unavoidably delay the completion of the cleanup and increase the amount of time that trespassers, residents, or tourists may encounter UXO. As a result, the detonation chamber will have a negative effect on public safety.

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