

Abstract

The Deep Submergence Vessel, NR-1, was a unique US Navy nuclear-powered ocean engineering and research submarine. It was built by the Electric Boat Division of General Dynamics at Groton, Connecticut. It was launched on 25 January 1969 and completed its initial sea trials 19 August 1969. Casually known as "Nerwin", *NR-1* was never officially named or commissioned. NR-1's 3000 feet deep diving capability provided the United States with an asset that was capable of performing missions no other vessel in the world was capable of. NR-1's missions have included search, object recovery, geological survey, oceanographic research, and installation and maintenance of underwater equipment. NR-1's unique capability to remain at one site and completely map or search an area with a high degree of accuracy has proved to be a valuable asset on several occasions (1).

Since the deactivation of the NR-1 on 21 November 2008, there are no deep-diving US Navy submarines that can currently complete scientific and military missions. Recent events such as the oil leak in the Gulf of Mexico, have demonstrated the need for a research submarine capable of reaching even greater depths than the original NR-1. The design of this more capable, deep-diving submarine forms the goal of this project.

The foundation for much of this report will be based on the Rand report, "A Concept of Operations for a New Deep-Diving Submarine" finished in 2003. This Rand study called for a more autonomous submarine capable of higher burst speeds (2) (3).