SUPSALV Supports Critical Piping Systems Repairs on USS INDEPENDENCE (LCS 2)

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WASHINGTON - The Naval Sea Systems Command's Office of the Director of Ocean Engineering, Supervisor of Salvage and Diving (SUPSALV) has deployed SEA 00C Underwater Repair Specialist, Scott Heineman, to lead a team of SEA 00C contracted underwater welder-divers to support Southwest Regional Maintenance Center (SWRMC) scheduled piping system repairs on USS INDEPENDENCE (LCS 2) at Naval Base San Diego.

USS INDEPENDENCE (LCS 2) pier side with welding barge positioned for Hull Mounting Plate installation.

In order to perform the required repairs, a water tight boundary was needed outside the skin of the ship to allow the internal repair team to remove and replace degraded 10 inch diameter seawater discharge piping up to the hull penetration.

To support this repair which would have normally required dry-docking, NAVSEA 00C designed an open top cofferdam system to be installed on the hull of the ship that would allow pumping the water out - thus isolating that section of the hull from the sea. To further reduce the cost of this repair, 00C modified an existing cofferdam body. Engineers used computer modeling software to design a mating flange that would fit to the ship’s unique hull and provide a watertight seal.

To hold the cofferdam in place, six Hull Mounting Plates (HMPs) for removable padeyes were designed and then welded to the ship's aluminum hull, both port and starboard, in the vicinity of the overboard discharge piping hull opening. The HMP’s can remain on the hull for future use.

Welders installing a Hull Mounting Plate on the starboard side of the INDEPENDENCE hull.

Heineman reported that, "In preparation for future LCS class repairs, NAVSEA qualified Phoenix's welding team on aluminum welding –topside and hyperbaric- which allowed this repair to take place."

Cofferdam fastened securely to the ship and dewatered allowing repairs to skin valves to take place

After HMPs had been welded, and welds certified, the cofferdam was deployed, sealed, and dewatered. With the cofferdam in place, the local contractor removed and replaced the degraded piping section. Because the cofferdam provided the only barrier to the sea, a dive team was on station 24 hours a day for seven days during the entire repair process ensuring the cofferdam maintained its seal protecting the ship and the workers inside.

The Office of the Director of Ocean Engineering, Supervisor of Salvage, directs development and maintenance of the Navy's salvage, underwater ship husbandry, diving and certification programs for the U.S. Navy.