Pressure Test of the U.S. Navy's CURV ROV System

ALVIN II Titanium Personnel Sphere Pressure Test

Pressure Test of Subsea Blowout Preventer Section

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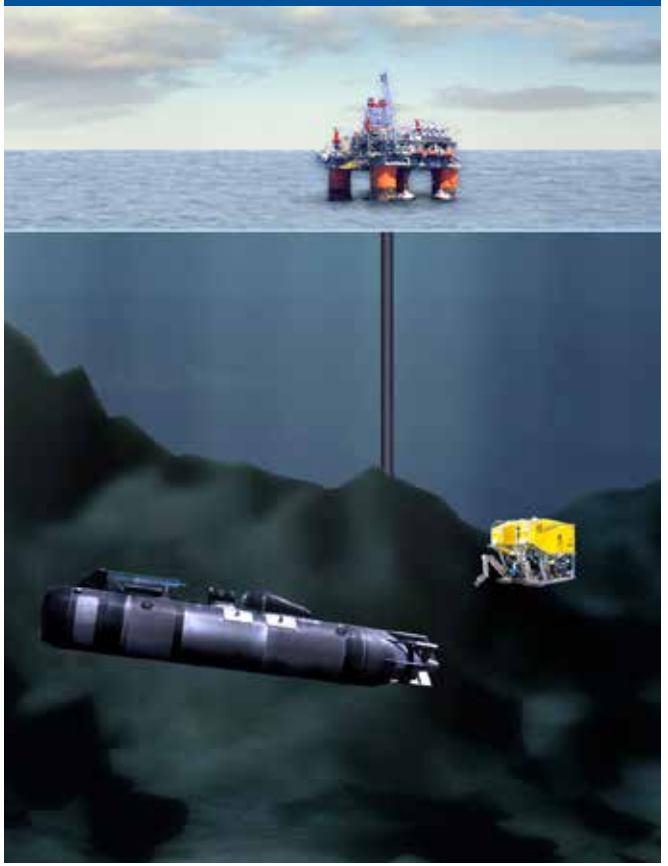
Deep Ocean Test Facility

Annapolis, Maryland



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Penn State Applied Research Laboratory's Deep Ocean Test Facility supports the U.S. Navy and the commercial marine/oil & gas machinery community with expert RDT&E consulting design, analysis and testing services. The facility contains four horizontal pressure tanks which use salt water or fresh water as the pressurizing fluid.

The Deep Ocean Test Facility's controlled environment offers many advantages in addition to cost savings and safety. Special equipment designed to work in the deep ocean can be thoroughly analyzed and modified while stringent requirements for reliability are evaluated.

The largest tank is 27 feet long with a diameter of 10 feet that accommodates full-scale deep ocean vehicles down to 27,000 feet depths. It is also widely used to evaluate underwater mining equipment, deep ocean arrays and cabling systems, diver transfer capsules, buoyancy devices, cabling, fuel cells and manipulators. Numerous manned and unmanned submersibles have made simulated deep test dives in our tank. It has also been used for pressure forming unique and difficult shaped vessels. Smaller tanks are used to economically evaluate equipment such as submersible motors, piping and fittings, electrical connectors and enclosures; and pressure compensated electrical and electronic equipment.

TANK DESIGNATION		A	B	H	V	GUN SHELLS
Characteristics	Tank axial center line	Horizontal			Vertical	
	Inside diameter	10 ft	4 ft	30 in	18 in	9 in
	Inside length	27 ft	12 ft	6 ft	6 ft	2 ft
	Static pressure (maximum psi)	12,000	12,000	7,000	10,000	20,000
	Pressurizing fluid	Salt or Fresh Water	Salt or Fresh Water	Fresh Water	Fresh Water	Salt or Fresh Water
	Heat removal capability, btu/hr	1,500,000		None	Temp. Control	Temp. Control
	Temperature regulation range	120°F cooling to 35°F		Ambient Air	Ambient Air to 140°F	Ambient Air to 140°F
Support	Overhead crane	40 ton				
	Additional capability	Closed Circuit TV available during testing On-site Prototype Machining and Fabrication Capability				
Engineering Services	AUTOCAD, ANSYS Fluid, Mechanical, and Electrical System Analysis Machinery Simulation and Control, Quieting Instrumentation Design and Application Data Acquisition, Reduction, and Analysis					