Topic: N131-034

Texas Research Institute Austin, Inc.

Improved Anti-Corrosion Coatings for Undersea Cable Connectors
Proteckt Non-Conductive Coatings (NCC), the state-of-the-art Anti-Corrosion coating for outboard wet area connectors, provides enhance bond strength and bond service life. Unlike the previous generation which was limited to flat or convex surfaces, this new process and technique applies an even coating over complex surface geometries. During the Phase II effort, testing conducted with Navy approved overmold systems, demonstrated Proteckt NCC exceeded the performance of the existing NCC in side by side testing. TRI/Austin, an advance materials research and development company, is targeting the Virginia Class submarines for qualification of the new Proteckt NCC. Once qualified, Proteckt NCC will be added to the NAVSEA PRO 20 molding manual as well as the PRO 30 NCC spray manual and become available for DoD NCC upgrades.

Technology Category Alignment:

None
None
None

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SYSCOM: NAVSEA
Contract: N00024-14-C-4094
Corporate Brochure: https://navystp.com/vtm/open_file?type=brochure&id=N00024-14-C-4094

Department of the Navy SBIR/STTR Transition Program

Statement A: Approved for Release. Distribution is unlimited.

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Improved Anti-Corrosion Coatings for Undersea Cable Connectors

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WHO

SYSCOM: NAVSEA

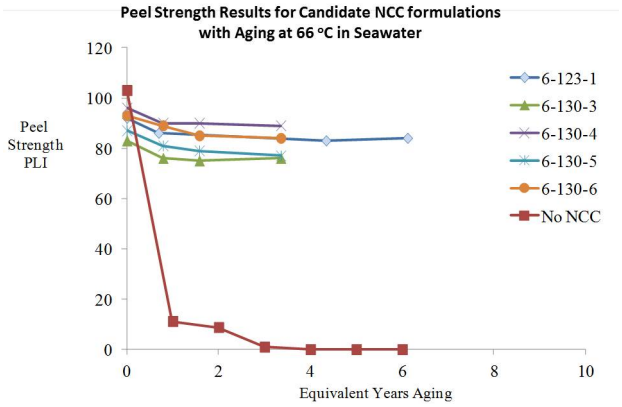
Sponsoring Program: PMS 450

Transition Target: Virginia Class and other Submarines

TPOC:
(401)832-8268

Other transition opportunities:
Any other subsea systems that are cathodically protected.

Phase II – Recent Results



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WHAT

Operational Need and Improvement:
The first generation Non-Conductive Coatings (NCC) had outstanding performance but applications can be limited to standard flat or cylindrical surface geometries due to the plasma spray application of the ceramic material and thickness requirements. The second generation NCC being developed will allow for applications to complex surface geometries.

Specifications Required:
The final goal of the project would be to qualify the new Proteckt NCC material to both the NAVSEA PRO 20 molding manual as well as the PRO 30 NCC spray manual. Qualification to both of the manuals would be a combination of lab accelerated life testing and field trails by the Navy.

Technology Developed:
The new Proteckt NCC is being developed to replace the existing plasma spray technology resulting in a better performing material, easier application methods, and reduced cost compared to the current NCC system. Numerous non-symmetrical outboard connector types are currently used by the Navy and are difficult to coat do to the complexity of the plasma spray NCC process. The second generation NCC will allow complex connector configurations to be coated with ease.

Warfighter Value:
The new Proteckt NCC will result in an overall cost savings to the Navy by both reducing the application cost and time and improving performance life of all coated connectors. This will allow for extended service life and reduce overall maintenance cost to the submarine fleet.

WHEN

Contract Number: N00024-14-C-4094 **Ending on:** September 1, 2016

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Final Formulation	Low	Lab ALT	5	September 2015
Full Connector Testing	Low	Lab ALT	6	April 2016
NUWC Testing	Med	15 Year ALT	6	September 2016
PRO 30 Apprival	Med	Navy Approval	8	November 2016

HOW

Projected Business Model:
The New Proteckt NCC will be a service offered by Texas Research Institute Austin, Inc. (TRI) to coat parts per the customers requirements. This work will be performed by TRI staff at the TRI facilities in Austin, Texas.

Company Objectives:
TRI is interested in obtaining the Navy's approval for the new Proteckt NCC coating and then transitioning the technology to the Navy submarine fleet along with any other sub-sea applications that might be applicable. The current driving need would be for PMS 450 the Virginia class of submarines then extending to other applications.

Potential Commercial Applications:
Since the current NCC is very well established in the off shore oil and gas markets quick insertion into that customer base will begin before the end of the phase II. Other applications for cathodic protection in the petro chemical market will also be explored.

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