



Power Dynamics Innovations LLC To Design and Manufacture Winches, HPU's And Winch Controls for SEAFAC

August 2017 – Stennis Space Center, MS,

Power Dynamics Innovations LLC has been awarded a contract by the Naval Surface Warfare Center Carderock, for the design and construction of four winch packages consisting of the winch, diesel powered HPU and Controls for SEAFAC, Southeast Alaska Acoustic Measurement Facility, located in Ketchikan, AK. The Winch Packages will be used in a Three Point Mooring System during the handling of underwater equipment.

PDI was awarded the contract March 22, 2017 with a required delivery of the equipment by August 11, 2017. Carl Liberty PDI Managing Member says, “This four month window for design, approval, manufacturing, testing and delivery is a testament to our team of professionals, which includes employees in all areas of our operations.” Liberty goes on to say, “PDI has selected supply partners who can deliver. These key supply partners understand our needs and they extend our capabilities in delivering high quality products to our customers and we thank them for their contributions, we delivered on schedule without delays.”



PDI has thirty years of providing successful, cost effective custom designed equipment and fluid power solutions. “We are thankful for this opportunity to supply our Dynamic Power™ Winches, HPU's and Controls to SEAFAC”, says Liberty.

Power Dynamics Innovations LLC is known as a leader in the industry, engineering custom winches and controls, hydraulic power units and pipeline tensioning equipment.

PDI supplied three positioning winch packages and one anchor winch package. The design includes mounting the major components on a self-supporting master skid, with the operator's station movable to either side of the winch. The master skid foundations have lifting pad eyes that make it very easy to position the winch packages.

Each winch package also contains the primary power source consisting of a diesel Tier 3 marine rated engine, along with local control consisting of engine and hydraulic instruments to operate the winch from a seated position. The design challenge in meeting the winch performance specifications was keeping the winch package to a size and weight that would not require special transporting permits.

Fluid Power Industry Leaders

Power Dynamics Innovations' **engineering/manufacturing expertise** is known and respected throughout the fluid power industry providing successful fluid power solutions for over thirty years. PDI stands today as a leader in the industry, engineering custom hydraulic power units (HPUs), winch and pipeline tensioning equipment and horizontal directional drilling units (HDDs), as well as worldwide repair and maintenance field service. Key to PDI's success has been our team of dedicated employees. To see how we can help you with your fluid power project call us or send us an email. For more information please visit our web pages.

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Significance of the Project

Southeast Alaska Acoustic Measurement Facility (SEAFAC), Ketchikan, Alaska

As the Navy's primary acoustic engineering measurement facility in the Pacific, the Southeast Alaska Measurement Facility (SEAFAC) provides the capability to perform RDT&E evaluations to determine the sources of radiated acoustic noise, to assess vulnerability, and to develop quieting measures.

Located in Behm Canal near Ketchikan, Alaska, the facility provides an ideal ship acoustic measurement site characterized by low ambient noise and minimal noise interference. SEAFAC supports submarine operations over a full range of speeds and depths required for underway tests during acoustic trials. SEAFAC is also capable of supporting submarine target strength measurements.



The facility consists of a site to collect acoustic signatures of submarines and surface vessels, and a unique site to measure acoustic signatures of motionless (static) submerged submarines. Acoustic signatures can be collected for a variety of speeds and operating conditions as the submarine transits back and forth between the dual bottom-mounted acoustic arrays. At the static site, suspension barges lower the submarine on cables and position it between measurement arrays to evaluate acoustic signatures.



The Static Site can test vessels of all sizes and types moored or suspended between surface barges. Submarines for example are suspended at various depths from the surface barges between two underwater arrays and the ship's propulsion systems are secured. Surface ships could be put on shore power with ship power and propulsion systems secured. Test personnel then obtain unique measurements on individual pieces of equipment and machinery. The signal processing and in-water hardware were designed to easily accommodate a variety of sponsors and requirements.

Since March 1992, the U.S. Navy has used this site to conduct research, development, test and evaluation activities. All measurements are passive in nature with no active emissions. These measurements enable the Navy to identify the sources of sound on the vessel (typically a submarine or surface ship), assess its vulnerability and develop quieting measures. The testing activities conducted at SEAFAC assist in maintaining the United States' superiority in submarine stealth technology, preserving a submarine's tactical advantage and protecting its survivability against threats.



Carl Liberty explains "Acoustic Measurements at SEAFAC are critical assets used by the Navy to defend the United States and its interests, and the stealth of a submarine is of the utmost importance. SEAFAC has reinvented submarine signature measurements." Liberty adds, "We are excited and pleased to supply our Dynamic Power TM Winches, HPU's and Controls to support SEAFAC's mission."

Infrastructure Investment.

PDI has been involved in numerous civil engineering Mega Projects including the new Midtown Tunnel in Norfolk, Virginia, the Olmsted Locks and Dam, one of the biggest civil works jobs ever undertaken by the Army Corps of Engineers. "Even though our part was a small piece of the projects, it was a very important piece." says Liberty.

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