Environmental Efforts Include

CUSTOM TECHNOLOGIES

for Shore Installations

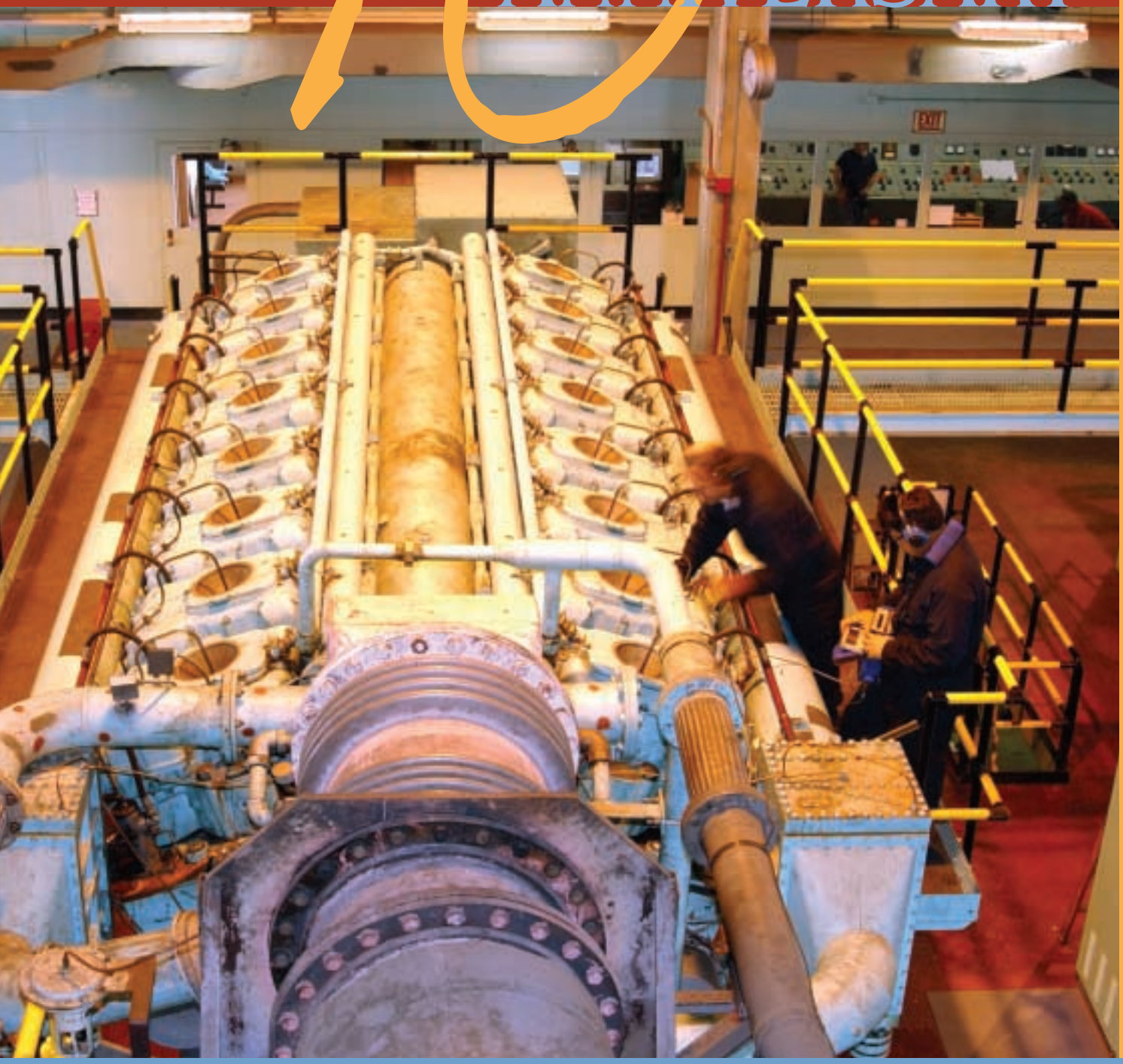
On the first of October 2003, the Naval Facilities Engineering Service Center (NFESC) celebrated 10 years of providing worldwide engineering support to U.S. Navy and Marine Corps facilities. NFESC, one of six Specialty Centers under the Naval Facilities Engineering Command (NAVFAC), is comprised of a team of over 500 employees dedicated to solving real-world engineering problems.

NFESC's mission is to identify and apply emerging engineering solutions through engineering, design, construction, consultation, test and evaluation, technology demonstration and implementation and program management support. NFESC team members provide support and expertise in a number of business lines.

Inspectors certifying the diesel power generator, which is located at NAVCOMSTA Cutler, ME. Certification is done yearly by NFESC Energy Department, Port Hueneme, CA.

Photo by Paul Del Signore

NFESC Celebrates 10 YEAR ANNIVERSARY



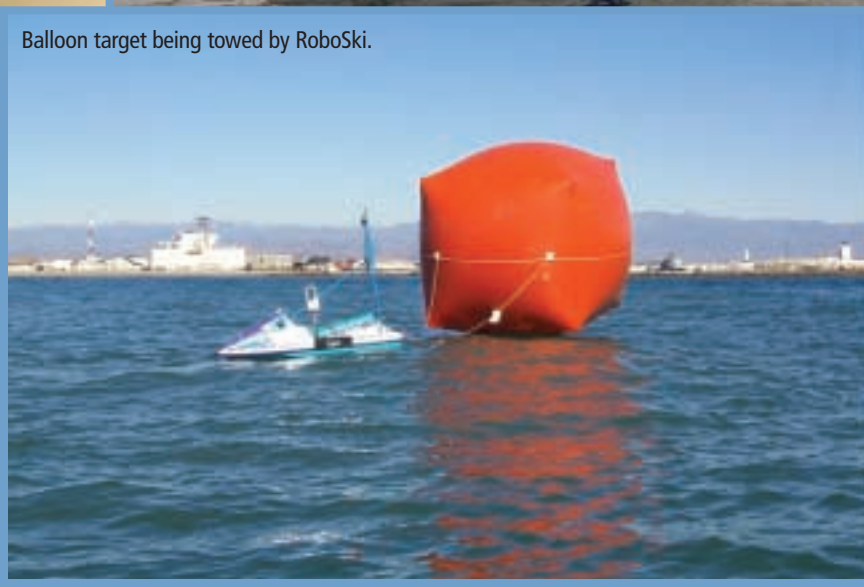
225 kilowatt wind energy turbines at San Clemente Island, CA.

Photo by Paul Del Signore

Driving piles for the Advanced Waterfront Technology Test Site in the Port Hueneme, CA Harbor.

NFESC owns and operates the M/V INDEPENDENCE, a 200-foot Ocean Construction and Research Ship with worldwide capabilities.

Original BOWTS facility at NAVSTA San Diego (1995).



Balloon target being towed by RoboSki.

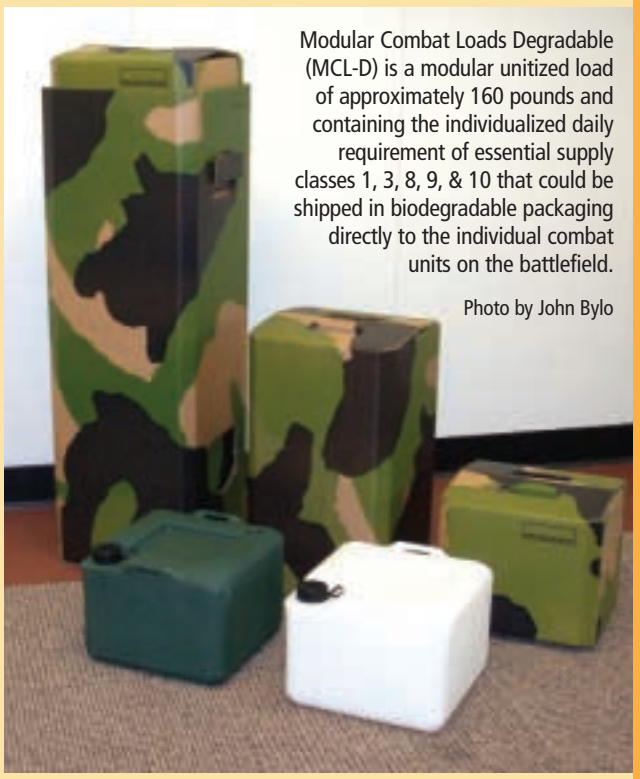
ENVIRONMENTAL ENGINEERING SERVICES

NFESC's environmental engineering efforts focus on customizing technology to meet the Navy shore establishment's environmental requirements. NFESC's goal is to facilitate compliance with new and more stringent environmental legislation and regulations at all government levels in a cost effective manner. Environmental engineering product lines include:

- Pollution Prevention (P2)
  Products and services to support shore activity P2 efforts include spill prevention and control, solid/hazardous waste minimization and recycling, hazardous materials substitution and reutilization, P2 equipment procurement and wastewater treatment/recycling.
- Environmental Compliance and Data Analysis
  Compliance services cover environmental planning, management, and data analysis; Oil Spill Program; Resource Conservation and Recovery Act compliance; Clean Water Act compliance; Clean Air Act compliance and alternative fuel vehicles; and conservation and natural resources.
- Hazard Abatement
  Industrial ventilation design, testing, and troubleshooting; planning and design support for asbestos and lead based paint issues; and evaluation of state-of-the-art asbestos abatement technology; and engineering designs for indoor air quality.
- Environmental Support for Weapon System Acquisition
  In conjunction with the Naval Air Systems Command (NAVAIR), P2 is incorporated at the beginning of weapons systems development. Programmatic Environmental, Safety and Health Evaluations (PESHE) are conducted as are environmental life cycle cost analyses.
- Cleanup and Site Characterization
  Cost/risk analysis, remedial action contracts for innovative technology, in-situ and ex-situ bioremediation, intrinsic bioremediation, soil and groundwater cleanup technologies and operation of the National Technology Test Sites (NETTS) for fuel hydrocarbons and chlorinated solvents are among NFESC's cleanup and site characterization services.
- Environmental Technology Transfer
  Technology demonstrations are conducted under a variety of programs to validate performance and increase acceptance of innovative technologies. Navy-wide technology transfer and implementation to shore activities is accomplished through efforts such as the Broad Agency Announcement (BAA), Pollution Prevention Equipment Program (PPEP), P2 Library, training seminars/conferences and product brochures/videos.

AMPHIBIOUS AND EXPEDITIONARY SUPPORT SERVICES

NFESC's Amphibious and Expeditionary Department focuses on the development, test and evaluation and general acquisition support of equipment, procedures and systems for the Navy and Marine Corps in areas directly related to logistics support and construction at expeditionary locations. These enabling technologies directly support the Navy vision of Sea Power 21 (specifically Sea Basing) and the Marine Corps doctrine of Expeditionary Maneuver Warfare (EMW). Technology areas include logistics information systems (asset visibility, logistics command and control and modeling and simulation), petroleum and water logistics, ship-to-shore cargo transfer, water purification, small, unmanned surface vehicles, expeditionary packaging and warehouse automation for floating platforms.



Modular Combat Loads Degradable (MCL-D) is a modular unitized load of approximately 160 pounds and containing the individualized daily requirement of essential supply classes 1, 3, 8, 9, & 10 that could be shipped in biodegradable packaging directly to the individual combat units on the battlefield.

Photo by John Bylo

NFESC Dive Locker Team prepares for an underwater inspection.

Photo by Paul Del Signore

Oil boom procured through NFESC.

Photo by Paul Del Signore

Largest federal photovoltaic project ever constructed is at Marine Corps Air Ground Combat Center, Twentynine Palms, CA.

The "Truckzilla" Medium Tactical Vehicle Replacement (MTVR) cargo/personnel transport was designed to replace older, commercially based cargo trucks used by Seabees.

U.S. Navy photo by Photographer's Mate Airman Lamel J. Hinton

Oil boom recovery on a platform boat.

Photo by Paul Del Signore

ENERGY AND UTILITIES ENGINEERING EFFORTS

NFESC's energy and utilities engineering efforts focus on the Naval shore establishment's energy program through the development of new technologies encompassing all facets of energy supply, distribution and consumption. The program is structured to achieve maximum practical energy conservation and to develop reliable, cost-effective alternate or renewable energy sources to replace petroleum and/or natural gas. The Naval Base Coronado Photovoltaic System is one such example. (See our article entitled "Navy Deploys Largest Federal Solar Photovoltaic System: Naval Base Coronado Now Boasts New Power-Generating System" in the spring 2003 issue of Currents).

OCEAN FACILITIES ENGINEERING EFFORTS

NFESC's ocean facilities engineering efforts focus on developing and improving the Navy's capabilities for the design, construction, maintenance, and repair of fixed ocean facilities. The wide range of technologies and services include marine geotechniques, ocean structures, undersea warfare, underwater cable facilities, hyperbaric facilities, mooring system magnetic silencing facilities, underwater inspection programs, and pipeline integrity assessments. A deep ocean simulator, a shallow water test facility and a seafloor plow test facility are located at Port Hueneme to assist in these efforts.

SHORE FACILITIES ENGINEERING EFFORTS

NFESC's shore facilities engineering efforts focus on new concepts and systems in waterfront facilities, physical security, ordnance facilities, aviation facilities, base survivability, and engineering technology applications. Through its physical security product lines, NFESC is the Navy's lead in developing new security and engineering concepts and technology to enable the

AN AWARD-WINNING ORGANIZATION

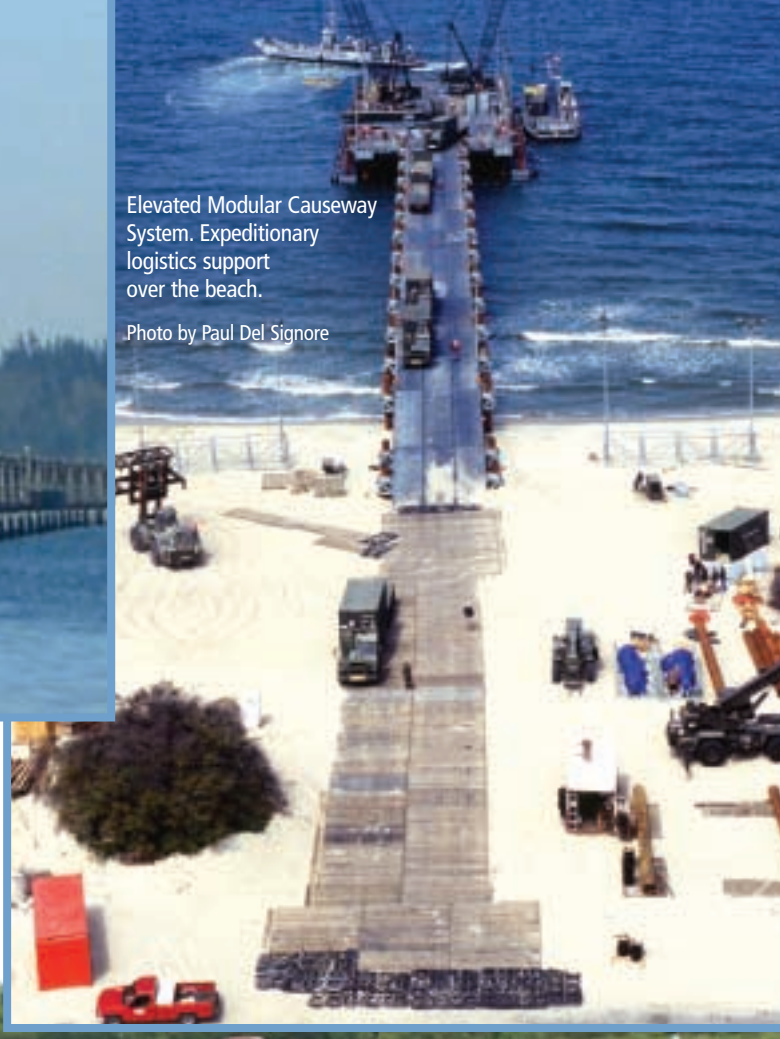
Throughout its 10 years, NFESC's environmental efforts have won numerous awards and acknowledgements and saved thousands of dollars for the Navy. The most recent awards include:

- The 2003 White House Closing the Circle Award in the "Environmental Preferability" category, and the National Pollution Prevention Roundtable's 2003 Most Valuable Pollution Prevention Award by the Methyl Tertiary Butyl Ether (MTBE) Biobarrier Team (See our article entitled "Full Scale Biobarrier Demonstration: NFESC Experimenting with Treatment of a Mixed Plume at Port Hueneme" in the spring 2003 issue of Currents.)
- The PPEP team won the 2003 Environmental Protection Agency (EPA) Region 9 award as a "Champion of Green Government for the Green Procurement Program."
- NFESC's video, "Oil Spill Prevention Ashore Awareness for Fuel Operators," received the Award of Excellence from the Videographer Awards and was deemed "written, produced, shot, and edited in an exceptional manner."

Many other NFESC environmental projects and programs have been written about in Currents. In this issue, look for articles about:

- An Air Quality Monitoring System ("Air Quality Modeling System (AQMS) For Use in Sustainability Studies" in the Technology Tips column),
- A new Spill Prevention, Control, and Countermeasure (SPCC) guidance document ("NFESC Releases Spill Guidance"), and
- Broad Agency Announcements ("New BAA Abstracts Available").

Water barriers procured and installed by NFESC's Physical Security Program.



Elevated Modular Causeway System. Expeditionary logistics support over the beach.

Photo by Paul Del Signore

On-site operational evaluation of commercially available lightweight reverse osmosis systems that could provide the Marine Corps a portable, HMMWV-transportable water purification system for small unit deployment scenarios.

Photo by C.E. (Buck) Thomas

NBVC hosts egrets.

Photo by Paul Del Signore

Navy to better protect its personnel and assets from vandalism, sabotage, theft, terrorism and other unlawful acts.

NFESC is the home of many of NAVFAC's Public Works Technical Consultants who specialize in cathodic protection, pavements, trackage, direct digital controls, roofing, vertical transportation equipment, paints and coatings, thermal plants and waterfront facilities maintenance. Designated experts help ensure that facilities are designed, constructed, and maintained in the best possible way to meet the Navy's mission requirements and include specialization in the following categories:

- Aviation Test Facilities,
- Communications Towers and Antennas,
- Explosive Safety/Ordnance Facilities,
- Magnetic Silencing Facilities,
- Security Engineering,
- Specialized Underwater Inspections,
- Supervisory Control and Data Acquisition (SCADA) Systems,
- Underwater Cable Facilities,
- Underwater Petroleum, Oil, and Lubricant (POL) Pipelines, and
- Uninterruptable Power Supply (UPS) Systems.

NFESC scientists, engineers, and technicians have worked on many interesting projects, developed innovative technologies, and provided solutions to numerous problems. A few examples are listed below:

- Port security technologies and barriers to protect Navy ships from terrorist attacks, including small unmanned surface vessels,
- Robotics and control technologies for cargo movement in heavy seas and computer-based logistics systems,
- Utility systems optimization (fuel, steam and water distribution systems) and predictive maintenance that included vibration analysis and infrared thermography,
- Web enabled database and information management systems,
- Pollution prevention and compliance, site cleanup, and restoration,
- Ocean construction and hyperbaric systems, as well as offshore structures including mobile offshore bases,
- Facilities security systems, and
- Moorings and anchors for large ocean structures and waterfront materials and structures.

To find out more about specific projects, contact the NFESC team at 888-4 THE ESC (888-484-3372).

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