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Navy going green



U.S. Navy Photo by MC2 David Didier

Utilities and Energy Manager Wells Parker talks with building energy monitors from around the base about the future energy conservation projects and ideas on October 21. The Navy has an ongoing agenda to reduce its energy consumption by 3% each year.

From the bridge



CMDR. JESSICA M. PFEFFERKORN
COMMANDING OFFICER, NSA PC

The Department of the Navy is participating in Energy Awareness Month in October. Throughout the Navy and here at NSAPC, we're focusing our attention on this event as Energy Action Month.

DoN is aligning its energy awareness theme with the Department of Energy: *A Sustain-*

able Energy Future—We're Putting All the Pieces Together. This theme encourages individuals to make energy conscious decisions, in the workplace and at home, to help solve the Navy's energy challenges.

The Navy's emerging energy strategy is centered on energy security, energy efficiency and environmental stewardship that together will enable us to remain the world's preeminent maritime power.

Energy security is critical to mission success. Energy security safeguards our energy infrastructure and shields Navy and Marine Corps from volatility in the energy market.

Energy efficiency, being energy-smart in the little things we do every day, gives us immediate payback and allows for investing in the future. Powering down your workstation at the end of the day can amount to huge savings when multiplied by more than 2000 computers on base.

Investing in environmentally-responsible technologies afloat and ashore will not only save money but will reduce greenhouse gas emissions and cut our dependence on fossil fuels.

Navy personnel are all responsible for energy efficiency and

GOING GREEN cont. pg.7

'Green Ship' Makin Island to be commissioned

STORY BY SURFACE FORCES
PUBLIC AFFAIRS

USS Makin Island (LHD 8) will be formally commissioned in a ceremony on Naval Air Station North Island Oct. 24.

The ship, which has been dubbed the "Prius of Navy warships," arrived in San Diego in mid-September, three years after her christening. The ship brought over 1,000 Sailors and their families to the San Diego community.

"I am eager for Makin Island to finally join the fleet," said Vice Adm. D.C. Curtis, Commander, Naval Surface Forces. "The Sailors of this crew exemplify the best this nation has to offer. They represent America's Navy with pride and distinction and proudly serve as part of a global force for good."

Makin Island is the final amphibious assault ship built in the LHD-1 Wasp-class, but is the first of the class built with gas turbine engines and electric drive.

The Navy projects that this advance will save nearly \$250 million in fuel costs over the ship's lifetime. The development is already paying off—during the ships transit from Pascagoula, Miss., to San Diego, Makin Island consumed over 900,000 gallons less fuel than a steam



Photo by Mass Communication Specialist 2nd Class Jon Husman

The amphibious assault ship Pre-Commissioning Unit Makin Island (LHD 8) pulls into her homeport of San Diego. Makin Island is the final amphibious assault ship built in the Wasp-class, but the first of the class built with gas turbine engines and an electric drive.

ship completing the same transit, saving more than \$2 million in fuel costs.

Other environmentally-friendly initiatives include the use of an electric plant to power auxiliaries, meaning no steam or associated chemicals; and the use of reverse osmosis water purification systems that negate the need for chemicals like bromine or chlorine.

"The USS Makin Island represents the centerpiece and future of naval expeditionary warfare

and will significantly enhance our ability to rapidly respond to emergent tasking around the world," said Rear Adm. Earl Gay, commander, Expeditionary Strike Group 3. "Her commissioning is a watershed moment for our Navy-Marine Corps team, and I am honored to have her in the fleet."

According to Capt. Bob Kopas, commanding officer, the true strength of Makin Island rests in her crew.

"This crew brings a 'gung

ho' attitude of teamwork and determined enthusiasm to the fleet, in the tradition of Carlson's Raiders, who originated the term 'gung ho'," said Kopas. "The dedication they have shown over the past four years has brought the ship to life and lays the foundation for Makin Island to face the challenges of the next 40-plus years of supporting the needs of our nation and Navy."

Navy sets ambitious energy goals

STORY BY KATHERINE
MCINTIRE PETERS
GOVERNMENT EXECUTIVE.COM

Navy Secretary Ray Mabus on Wednesday outlined five ambitious goals for decreasing reliance on petroleum and curbing greenhouse gas emissions.

"Energy reform is a strategic initiative and the stakes are very high," Mabus told Navy and Marine Corps officials and defense contractors attending the Naval Energy Forum in Northern

Virginia. "We simply rely too much on a declining stock of fossil fuels that most likely will continue to rise in cost over the next decade."

In an effort to shift that reliance on fossil fuel, Mabus said he will direct the Navy and Marine Corps to begin weighing the life-cycle energy costs associated with all acquisitions when making contract awards.

"The lifetime energy costs of building a system and the fully burdened cost of fuel of empowering those [weapons systems]

will be a mandatory evaluation factor used in awarding contracts," Mabus said. "We're going to hold industry contractually accountable for meeting energy targets and system efficiency requirements."

The department also will consider contractors' overall energy efficiency as a factor in making acquisition decisions. "We want industry to take steps to not just provide us with energy-efficient products, but to produce those products in energy efficient ways," he said.

In addition to adjusting its approach to acquisition, the Navy by 2012 will establish a "green strike group" of fuel-efficient ships, with some running on biofuels. By 2016, that strike group will deploy as a "green fleet composed of nuclear-powered ships, surface combatants equipped with hybrid-electric alternative power systems running biofuel and aircraft flying only biofuels," he said.

Other goals outlined by the secretary include:

ENERGY cont. pg. 8

Naval Research Lab looks to sea, sun for energy solutions

By **BOB FREEMAN, AMERICAN FORCES PRESS SERVICE**

The services could more effectively power unmanned vehicles, underwater monitoring sensors, ships and aircraft if Naval Research Laboratory scientists achieve their goals of harnessing solar and sea power to fuel the military for years to come, a top NRL scientist said.

"A worldwide peak of fuel production is expected in five to 15 years, and increased demand will likely create large swings in price and availability," Barry Spargo, head of NRL's chemical dynamics and diagnostics branch, said in an Oct. 14 interview on Pentagon Web Radio's audio webcast "Armed with Science: Research and Applications for the Modern Military."

"The bottom line is that we need to develop alternative power and energy because conservation and efficiency alone

will fall short of meeting future needs," he explained.

The quest for alternative fuel technologies is a top priority for the Navy, Spargo said, adding that energy research at NRL is diverse, allowing them to bring together a wide array of disciplines to address unique problems confronting alternate energy research.

"We're conducting research in a number of areas that look really promising; however it's unlikely that a single research area will solve the energy problems that we are facing," Spargo said. "NRL is currently investing in synthetic fuel production at sea, enhancing fuel energy density, exploration of methane hydrates in the ocean, energy harvesting from the sea, fuel cells and batteries, power electronics and superconductors, and inertial fusion.

"Each of these research areas has significant challenges," he added, "but certainly promising

potential to help solve some of the Navy and [Defense Department's] future power and energy needs for force mobility."

One area of research that NRL is pursuing is the feasibility of sea-based production of hydrocarbon fuels. According to Spargo, the goal is to produce fuel in the same location where it is being consumed, specifically to support surface ships and aircraft operations from carriers at sea.

"This would give battle groups independence from fleet oilers which provide refueling needs," Spargo explained. It also would cushion naval forces from future fuel shortfalls, he added, providing energy independence to the Navy.

Fuel synthesis would be accomplished by a catalytic conversion of hydrogen produced directly from sea water by the electrolysis of water and carbon dioxide. "It's a complex process, but we believe that emerging

scientific technology supports the development of synthetic logistic fuels," he noted.

"There are significant research and technological challenges, but the potential payoff is really high," he added.

Spargo noted that producing energy from sea water would be carbon dioxide neutral, thus not adding to the world's carbon footprint. "This technology would be a great candidate for dual use in the civilian sector if it actually comes to fruition," he said.

Spargo described another promising avenue of research that is investigating the potential for tapping the thermal energy stored in tropical waters.

"The energy stored in tropical waters is 300 times that of the world energy consumption. This makes the ocean the largest solar collector on Earth," he noted.

Ocean thermal energy conversion is a potentially efficient method to convert the energy stored in tropical oceans into electricity.

"You take the surface water, which is about 80 degrees Fahrenheit, and [use it to] heat a working liquid, something like propylene, which has a vapor point below 80 degrees," Spargo explained. "That converts the propylene liquid into a gas which drives a turbine that produces electricity. We then bring cold water up from about 3,000 feet below the surface, cool that vapor back into liquid and essentially create a cyclic process."

Taking a more direct approach to harnessing the energy of the sun, the lab is working on flexible photovoltaic panels about four times as efficient as current solar panels. According to Spargo, the panels can be easily folded and transported, or even integrated into materials like tents and uniform covers to provide a local power source in support of expeditionary forces.

SOLUTIONS cont. pg. 7



Photo by John F. Williams

John Bigus, left, a fuels engineer assigned to Naval Air Warfare Center-Aircraft Division in Patuxent River, Md., explains the greening of Navy Fuels at the first Naval Energy Forum hosted by the Office of Naval Research and Task Force Energy. Bigus stands in front of a display of camelina and algae fuels and processes for the production of renewable fuels to be tested in Navy ship and aircraft.

Navy birthday ball



U.S. Navy Photo by MC2 David Didier

Naval Support Activity Panama City color guard presents the colors at the annual Panama City Navy Ball held at the Boardwalk Beach Resort Oct. 3.



U.S. Navy Photo by MC2 David Didier

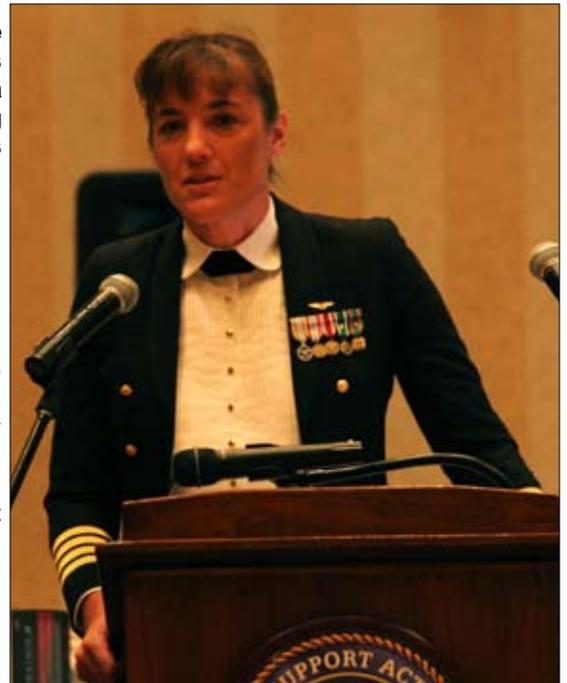
Cmdr. Timothy Richardt, the oldest sailor, cuts the Navy birthday cake with Seaman James Groom and Seaman Ross Winker, the youngest sailors.



U.S. Navy Photo by MC2 David Didier

Left. Capt. Heide Marie Stefanyshyn-Piper presents a photo to Cmdr. Jessica Pfefferkorn commanding officer NSA PC at this year's Navy Ball.

Right. Capt. Heide Marie Stefanyshyn-Piper speaks to everyone at the Navy Ball about the importance of the core values of Honor, Courage and Commitment in the Navy and at NASA.



U.S. Navy Photo by MC2 David Didier

Navy Ball guests stand during the traditional two-bell ceremony given in remembrance of all service members who are prisoners of war or missing in action.



U.S. Navy Photo by MC2 David Didier



U.S. Navy Photo by MC2 David Didier

Master-at-Arms 2nd Class Scott McKenzie and his girlfriend Dina Lago dance together at the Panama City Navy Ball.



U.S. Navy Photo by MC2 David Didier

Above: Lt. Cmdr. Robert Porter and wife Kim dance at the annual Panama City Navy Ball held at the Boardwalk Beach Resort Oct. 3.



Photo by Steve Applegate

Capt. (Ret.) Fred and Cindy Shutt pose for a picture with Richard "Cav" Cavanaugh during the annual Panama City Navy Ball.



U.S. Navy Photo by MC2 David Didier

Left: Head members of NSA PC give a toast at the annual Panama City Navy Ball.



Photo by Steve Applegate

Below: Guests dance the electric slide at the annual Panama City Navy Ball.

Guests danced to the sounds of the Rhythm All-Stars after the formal Navy Ball ceremony.



Photo by Steven Applegate

Survey aids local school funding

STORY BY **LYNDA KENT NSA**
PC SCHOOL LIAISON OFFICER

All NSA PC and Tenant Command civilian employees, contractors, and military who are parents or guardians of school-age children should be on the lookout for the Federal Impact Aid survey cards which will be distributed toward the end of October. These cards will either be mailed to you or sent home from school with your children.

Data received from the Federal Impact Aid survey cards is a source of desperately needed funding for our local schools. For our schools to be awarded the maximum amount of funding available, all you have to do is fill out the card and return it to your child's school. Cards

must be returned for the data to be collected that will qualify our local schools for the additional funding that is offered under the Federal Impact Aid program.

All military dependent and "federally connected" students in grades K-12 are eligible. "Federally connected" children include those whose parents or guardians are federal civilian employees or contractors. The children of civilian employees and contractors who work at NSAPC qualify as federally connected.

Federal Impact Aid surveys are conducted annually in the month of October. The data received determines the amount of additional funding local schools are allocated to help off-set the tax revenue that is lost due to the

tax exempt status of the Federal property located in the school district.

Simply equated, the more military dependent and federally connected students living in and reported by a school district the more funding the district receives.

Unfortunately, Bay District Schools report that they currently receive no funding for students who are "federally connected". According to the guidelines, 10% of the student population must have parents or guardians who work as federal employees or contractors to qualify for the federally connected funds. As previously stated, the students of employees and contractors at NSAPC qualify under this category. Given the current

total student population of approximately 25,000 students, the District needs to identify approximately 2,500 students to qualify for the extra federally connected funding.

It is important to note that the personal data a person supplies on the survey cards is protected under the Privacy Law that is granted to the school district.

So, heads up! Be on the lookout for the coming Impact Aid cards. With the severe budget cuts that have come to the District Schools, Impact Aid is a source of needed funds. When you receive your cards, please be diligent to fill them out and get them back to the schools. If for some reason you do not receive a card, contact your child's school.



Length of service recognition for November

15 years David Hutcherson

25 years Tracy L. Nye

30 years Gloria Bond
Jack E. Wooden
Robert K. Davis
Matthew L. Ziegler

35 years Joel L. Teague

Thanks for all the hard work!

Studying at local campus provides career boost

STORY BY **DR. DAVID SKINNER**
FLORIDA STATE UNIVERSITY
PANAMA CITY

Looking for a way to give your career a boost? For some local Navy enlisted personnel the answer has been engineering education. Twelve of the top 15 highest-paid undergraduate degrees are in engineering, according to CNN. The fact is America is desperately in need of engineers. A growing number of local Air Force and Navy personnel have taken advantage of the engineering program at Florida State University Panama City. Industry is interested in the leadership experience gained in the services to enhance their post service careers.

Many of you may remember Senior Chief Eric Haberle, who retired from the base in 2006. What is the Senior Chief doing now? After graduating from FSU PC with a degree in electrical engineering, he became the

proverbial "rocket scientist" and went to work for a NASA contractor and then NASA. He is currently the ARES I-Y Upper Stage Test Integration Lead, long title, but he is responsible for the Upper Stage of the first



Eric Haberle

test vehicle to fly at Kennedy Space Center. The Program replaces the Space Shuttle and will eventually take astronauts to the moon and Mars. Eric has stated numerous times that without a plan that included a bachelor's

degree, and the benefit of FSU-PC being located so close to the base, he would have never been able to retire when he did. Eric said "when you look at what is available at FSU-PC, the class size and the enhanced learning environment it is an unbeatable situation." When you look at all of the benefits with the new GI Bill, you really can't afford not to go college during your shore duty. The current economic climate amplifies the need to attend college, especially engineering school. If you look at the top paying and most needed fields almost all require engineering degrees.

Closer to home, NSWC PC Division just hired Chief Navy Diver (Ret.) Tim Nehring into the Expeditionary Warfare Department. Tim, who recently retired from the Navy Experimental Diving Unit (NEDU) after a career as a Navy Diver, is now an engineer doing development

EDUCATION cont. pg. 8

Going Green (cont. from pg. 1)

promoting a healthy environment for a sustainable future. So what are we doing locally to help reach Navy and DOD energy goals? According to Public Works "Energy Czar" Wells Parker, a whole lot!

Energy projects currently underway will lower our total energy and water use by about 5% each per year annually. Our 2009 base-wide Energy Conser-

vation Project, representing a \$1.7 million investment across an aggregate of over 70 buildings, pays for itself three times over during the 30-year lifespan of the assets.

Across NSA Panama City, we have replaced over 20,000 lights with premium efficiency lights in the last 3 years, slashing lighting power use in our buildings by up to two-thirds. Our MWR basketball gym is a shining example, wherein new premium 150 watt light fixtures actually produce more light than the old 400 watt lamps they replaced.

Starting in 2010, one of the training pools at the Naval Dividing and Salvage Training Center will be heated by solar energy. You may have noticed we've already gone solar with street lights at the north end of the NDSTC parking lot, the NDSTC jogging path on Sandpiper, and by the Osprey Lane path bridge. These initiatives are phase 1 of a multi-year shift toward energy independence.

Efforts like these have resulted in Naval Surface Warfare Center Panama City Division's recognition by Federal Energy

Management Program and

NSA PC achieving back-to-back SECNAV Gold awards for 2008 and 2009.

A big round of thanks for our success is due to the diligence of command and department energy monitors around the base. But these achievements are made possible only through good energy stewardship by each one of us, every day. Keep up the good work!

AMVETS AMERICAN VETERANS



Active duty Servicemembers are welcome at all times in AMVETS post #47 in Panama City Beach. Most importantly, AMVETS post #47 will sponsor active duty members for their first year membership (i.e. "it's free"). Membership benefits include a membership card which will allow your entry into any AMVETS post in the USA, a door keycard, and participation in many "members only" post events. Americans who have served in the military at any time can obtain their membership by presenting their DD214 plus a \$30.00 annual fee.

At AMVETS post #47 we try to keep the atmosphere light and the mood happy. We have many events including karaoke or live bands every Friday, plus games, shuffleboard, pool and darts with other special events happening all the time!

AMVETS is the only veterans' organization that accepts all honorably discharged veterans, including the national guard and reserves, no matter where they served.

COME IN AND ENJOY THE CAMARADERIE!

**AMVETS POST #47 is located in Promenade mall at:
8317 Front Beach Road, suite #14
Panama City Beach, fl 32407-4867
(We're right across the street from the Old Ocean Opry)**

Solutions (cont. from pg. 3)

"Additionally, NRL has prototyped a photovoltaic coating that can be sprayed on surfaces, like a rock, to create on-the-fly energy sources," he said. "You can imagine a small force spraying a rock and using it to generate electricity to power some device that they are using in the field."

A more unusual approach to energy production is the use of certain marine microorganisms that consume carbon dioxide in the ocean and convert it into energy that can be harvested. "As part of their biochemistry, these organisms produce electricity," he explained.

NRL has developed a number of devices that use microorganisms to power small sensors, like bottom-moored acoustic hydrophones for monitoring ship traffic, Spargo said.

"If we can produce enough energy with these devices, they could also power unmanned underwater vehicles, or at least provide a docking station where they could regenerate their batteries using electricity produced by these microbes," he said.

The lab has expended considerable research and development into developing hydrogen fuel cells as an energy source, Spargo said. "Fuel cells are used to create electricity, and they do this by converting hydrogen and oxygen into water," he explained.

Hydrogen fuel cells can de-

liver about twice the efficiency of a conventional combustion engine and when used to fuel unmanned aerial vehicles, or UAVs, they can support heavier payloads than the earlier battery-powered models.

A recent test of the prototype Ion Tiger UAV, powered exclusively by a hydrogen fuel cell, sustained continuous flight for 23 hours and 17 minutes.

"Also, they can operate in stealth because they're not a combustion engine, which has a considerable heat signature, as well as a noise signature," he said.

Spargo also described efforts to harvest methane hydrates from the sea floor. "They have the potential of being double the amount of recoverable and nonrecoverable fossil fuels," he said.

Spargo admitted that there are many challenges to harvesting methane hydrates, including locating them and accessing them at such great depths, but it would be worth the effort.

"If we're able to actually extract these from the ocean floor, there's a potential to meet our national natural gas needs for about a hundred years," he said.

"Energy research is a key priority for the Navy and, for that matter, all of us," Spargo said. "I'm certain that there many exciting discoveries ahead that will help us achieve this goal of energy independence, as well as being good stewards of the environment as we operate and live in it," he said.

Education (cont. from pg. 6)

and life-cycle maintenance for the Landing Craft Air Cushion (LCAC) software suites. Tim turned his education, and the exposure to industry provided by his FSU PC senior design project, into an engineering position with the LCAC software development team. He is now happily engaged in the tailoring of Windows Embedded Operating Systems for the latest LCAC control processors.

Tim entered the Navy to be an Electronics Technician and spent a year and a half in Great Lakes and Norfolk, training to be a satellite communications technician. Tim learned to program computers in Costa Rica and took advantage of the Navy's Tuition Assistance to get an Associate of Science Degree while stationed in Kings Bay, GA. Unfortunately, there were no upper-level engineering degree programs available in the Kings Bay area and his pursuit of a higher education was put on hold. He later realized that his true career desires and abilities lay in another direction,

while stationed right across the bridge from FSU PC. After applying to the University, he was subsequently accepted into the Electrical Engineering program and began reaching for a different brass ring. He retired from active duty after 22 years of service, and used the GI bill in order to earn a Bachelor of Science degree in Electrical Engineering. FSU PC offered an ideal venue for Tim with small classes, flexible professors and close Navy ties. Tim excelled in his studies with a near-4.0 GPA. During his final two semesters Tim was part of a four-student team project to prototype an automated ballasting system for the Navy LCACs using the transfer of onboard fuel stores. His involvement in the project brought him to the attention of Naval Surface Warfare Center personnel and, ultimately, resulted in an offer to join the LCAC team.

Chief Haberle completed his degree while on active duty while Chief Nehring took advantage of the new GI Bill to complete his program. The new GI Bill greatly expands the post-service educational opportunities. A degree may open the door to a future career for you.



***The Combined Federal Campaign,
you have the opportunity to
contribute through November 13***

Contact your departmental Key worker today.

This year's goal for NSA PC is

\$113,000

Help support those in need.

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Military Sportbike Rider Course

***Scheduled for
November 12.
Register via ESAMS
or call Shannon at
ext. 6116***

Energy (cont. form pg. 2)

- By 2015, the Navy will cut in half the petroleum consumption of its 50,000-vehicle fleet. As vehicles go out of service, they will be replaced with flex-fuel, hybrid and electric vehicles. "Moving to biofuels and electric vehicles will benefit the local communities where bases are located and will spur the adoption

of similar vehicles [locally]," Mabus said.

- By 2020, the Navy will produce at least half of its shore-based energy from alternative sources, with the goal of returning power to the electric grid wherever possible.

- By 2020, the Navy will ensure that 50 percent of the total energy consumed by ships, aircraft, vehicles and shore facilities is supplied through al-

ternative and renewable sources. Today that figure is 17 percent.

None of the goals will require legislative action, Mabus said. He cited advances in biofuels and recent improvements in engine efficiency for both ships and aircraft as evidence they are reachable.

"No one has ever gotten anything big done by being timid," he said.