

CW, MILCON to receive billions from Recovery Act

President Barack Obama signed into law the American Recovery and Reinvestment Act of 2009 on Feb. 17. The act, Public Law 111-5, is also referred to as the “stimulus package” and is intended to help in the recovery of the U.S. economy.

The U.S. Army Corps of Engineers is directly appropriated \$4.6 billion in the act for its civil works program, and expects to receive between \$2 billion and \$2.5 billion for military programs missions through the Department of Defense. Military programs has already received requests from non-DoD agencies for assistance in executing \$1 billion in work, and additional requests are anticipated.

“The funding in the Recovery Act provides USACE with tremendous opportunities to help support the nation during this time of economic hardship,” said Lt. Gen. Robert Van Antwerp, the USACE commander. “The Corps will quickly put these funds into action to meet the President’s and Congress’s intent to get our fellow citizens back to work. At the same time, we will make every effort to ensure these funds are effectively used in ways that will provide lasting value to the nation and the American taxpayer.”

Economists estimate that USACE will create about 8,000 direct jobs for every \$1 billion spent. It is also estimated that 20,400 jobs will be indirectly created for each \$1 billion spent in industries that supply or support construction, operation and maintenance (O&M) activities, and the industries that sell goods and services to these workers and their families.

The \$4.6 billion provided for the civil works program includes \$2 billion for construction and \$2.075 billion for O&M. The Mississippi River and Tributaries account will receive \$375 million in appropriations.

USACE has identified many potential civil works projects that meet the criteria of the legislation for funding, and in mid-March expects to publish its final list of projects to receive Recovery Act dollars. Selected projects will be distributed across the U.S. and across USACE programs to provide the nation with inland and coastal navigation, environmental, flood risk management, hydropower, recreation, and more.

The legislation sets forth project selection criteria

for projects that will:

- Be obligated/executed quickly;
- Result in high, immediate employment;
- Have little schedule risk;
- Be executed by contract or direct hire of temporary labor;
- Complete either a project phase, a project, or will provide a useful service that does not require additional funding.

The Corps’ military programs expects to receive about \$1.4 billion in military construction (MILCON) funding. The Recovery Act provides more than \$3 billion in Sustainment, Restoration, and Modernization funds for Army, Air Force, and DoD health facilities, but the specific amount USACE will execute is undetermined at this time.

USACE, as the DoD construction agent, is working closely with DoD, Army, and Air Force program managers to refine project lists and timelines for project awards and construction schedules. USACE anticipates awarding contracts for child development centers, Warrior in Transition complexes, family housing, troop billeting, and hospitals.

The MILCON funds include \$555 million for expanding the Homeowners Assistance Program to provide assistance to relocating military service members, civilian employees, and their families who face financial loss due to the ongoing housing crisis. The Directorate of Real Estate is developing policy guidance for implementing new authorities provided in the recovery act.

“This is certainly a historic time for the Corps,” said Van Antwerp. “In addition to the missions the Corps will do to support the Recovery Act, we are also fully engaged in our support to the Global War on Terror, the ongoing recovery along the Gulf Coast, and all the many other things we do to support the nation on a daily basis.

“I am fully confident in the ability of the men and women of the Corps to get all of this done,” Van Antwerp added. “I believe the President and Congress have also expressed their confidence in us with what we’ve been entrusted to do in the recovery act.”

Ice storm challenges Corps

By Carol Labashosky
 And Ron Elliott
 Louisville District

Kentucky residents didn’t have to shiver under quilts for long after a winter ice storm. The U.S. Army Corps of Engineers supplied generators and cleared debris to keep the public warm and safe after the storm, which rivaled the winds of Hurricane Ike that passed through the region in September.

“It was snap, crackle, and boom as the trees and limbs fell from the weight of ice,” said Carl Nelson, pastor of the First Baptist Church in Kuttawa, Ky.

Nelson was one of several hundred thousand people in Kentucky who lost power. Temperatures in some



Broken trees block a road during the ice storm. (Photo courtesy of Louisville District)

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Top lab has wide influence

The U.S. Army Corps of Engineers has long been recognized for its engineering contributions and accomplishments in specific mission areas such as water resources and military construction.

But the Engineer Research and Development Center (ERDC) is pushing far beyond traditional USACE missions and boundaries by providing technologies that save lives, improve the environment, aid the construction industry, and set the standard in many engineering, scientific, and research areas.

“ERDC is unique,” said Dr. James Houston, ERDC director. “We’re so diverse in our expertise and capabilities. We’re involved in a wide range of technologies, everything from developing bunker busting bombs to saving endangered birds.”

ERDC was created in 1999 when the existing seven USACE laboratories were consolidated into one research and development organization. Today, ERDC has more than 2,000 team members and \$1.2 billion in specialized research facilities that address some of our nation’s most complex problems.

ERDC operates like a business with most of its research efforts funded by sponsors or customers on a reimbursable basis. The annual research program has exceeded \$1 billion for the past several years.

Today, USACE projects account for only about 20-25 percent of ERDC’s work. Other customers include all the military services and major commands; federal agencies such as Department of Homeland Security, Department of State, and the Environmental Protection Agency; state and local agencies; and even private industry through special cooperation agreements.

“Our vision is to be the world’s premier engineering and environmental sciences organization,” Houston said. “We strive to be the best in specialized areas and solve problems that other organizations cannot even attempt to tackle. Bottom line – ERDC’s mission is to support our armed forces and the nation to make the world safer and better.”

Awards

ERDC’s contributions and achievements have been recognized far and wide. For the second year in a row, ERDC was named the Army’s Large Research Laboratory of the Year. It is the fourth time since the begin-

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Insights

People are our most important asset

By Col. Hanson Boney
Chaplain, U.S. Army Corps of Engineers

Milton Hershey was one of America's most successful businessmen. Hershey is best known for founding an immense confections empire based on chocolates, but few know that he tried unsuccessfully on two separate occasions to jump-start his business. He failed to grasp the importance of human capital, and instead adopted the harsh business tactics of the robber barons of the late 19th century.

Hershey eventually moved to a small town in Pennsylvania after achieving nominal success at producing caramels. Hershey realized that economic growth could be dramatically affected by employee discontent, and that a motivated work force produced quality as well as quantity.

So Hershey used a sizable share of his earnings to improve the quality of life for his employees, allowing them to invest in the company and make suggestions for improving the company. He insisted that his employees take time off from their jobs for relaxation and that they engage in physical fitness activities as well as educational pursuits for personal development.

He established schools and daycare centers for his community, the first of their kind by any industrial organization. The management of the Hershey Company at every level made sure that their employees received the proper emotional and physical support

to produce a viable product.

Objective 1c of the U.S. Army Corps of Engineers' campaign plan emphasizes establishing human resources and family support programs that promote readiness. Just like Milton Hershey of a previous generation, we realize that a motivated workforce produces extraordinarily positive results.

Although we are not a profit-making organization, we must seize the opportunity to foster among our employees a desire for excellence. Only then can we deliver to the American people and our allies the services and products they need to sustain viable economic growth.

Some ways we can do this are:

- Explore the potential and motivations of our employees. This can be done through periodic team building opportunities.
- Place people where their gifts and talents can be used to their fullest, and allow them to progress within the framework of the mission.
- Always ensure that they are aware of the changes to the mission. In other words, keep them informed. Don't assume anything!
- Within the limits of the law, inquire about their well-being and job satisfaction, and allow them to make suggestions for improving the work environment.
- Take note of the important events in the lives of your employees. This lets them know that you are just as concerned about people as you are about the

product.

- Reward them verbally and financially whenever possible.

- Remember that your success as a supervisor will be determined by how well they do their jobs and that, as a team, each link depends on the strength of the others.

As a Christian leader, I am always reminded of the dynamic, people-oriented approach that Jesus Christ used in His ministry. He knew that the spread of the gospel depended on the faithfulness and motivation of its adherents, so His first duty was to inspire and equip the small nucleus of followers that surrounded him. He was keenly aware of the enormous task that lay ahead of them, but He also knew that with the right training, the right focus, and the right authority they would be able to turn the world upside down.

They did just that in spite of tremendous opposition and persecution because they were confident that their leader cared and that what He had taught them would usher in something new and different — a kingdom for the ages.

As engineers, let us usher in something new — building a team, BUILDING STRONGSM.

(The opinions expressed in this article are those of the writer and do not reflect the official policy or position of the U.S. Army Corps of Engineers, the Department of the Army, the Department of Defense, or the U.S. government.)

Commentary

Reservist sees inauguration up close

By Daniel Calderón
Los Angeles District

(Daniel Calderon of the Public Affairs Office in Los Angeles District is also a petty officer 1st class in the U.S. Naval Reserve. During the inauguration of President Barack Obama Jan. 20, Calderon served with the Armed Forces Inauguration Committee as a photojournalist documenting the armed forces' involvement in the ceremony. These are his first-hand impressions of that day.)

Unless you're a member of a still-undiscovered tribe in the Amazon rain forest, you're aware that Barack Obama was inaugurated as our 44th president on Jan. 20. I was there, taking pictures on the West Lawn of the Capitol, and a lot of folks who were not present have asked me what it was like.

The scene. Let me set the scene. I arrived at the lawn in my uniform at 3:30 a.m. and stood outside the gated area waiting for the security sweep to end. Once it did, I gathered up my camera gear (two Nikon D-300s, one with a long lens and one with a regular lens, plus my camera bag) and went out to the lawn.

I've never understood what it meant to be so cold it hurts, but I found out that morning. It helped that I was able to walk the entire lawn so I wasn't concerned about freezing in place.

Nothing really happened until 8 a.m. when the crowds came through the security gates and the escorts began directing them to their assigned seats.

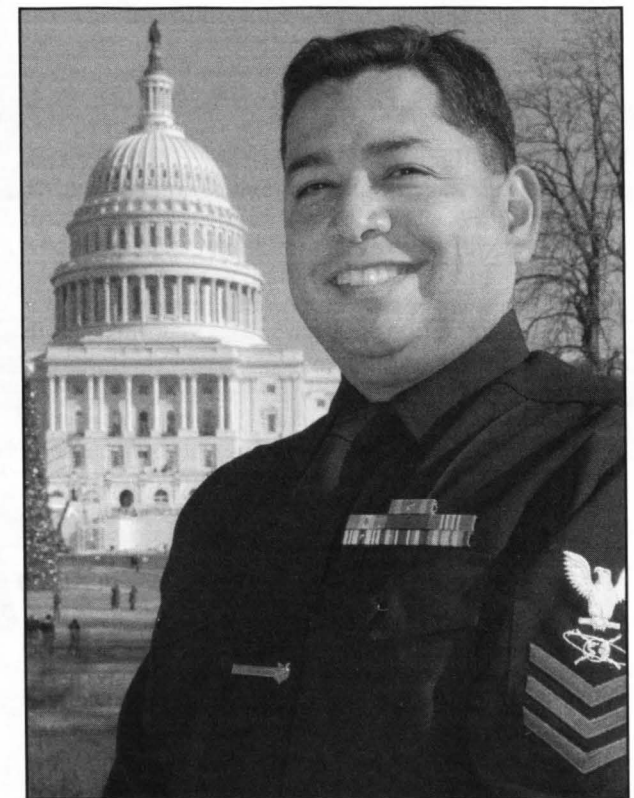
I'm a great lover of faces; I like to watch people's expressions. That morning, the emotional range was almost non-existent. There was just a transcendent joy, a barely repressed giddiness. People were nice to each other. They helped each other across chairs. They listened to the ushers' instructions to move all the way to the end of their assigned row and to not save seats with nary a peep of indignation.

People watching. As the morning moved on, more and more people arrived. From my vantage point, I could see all the way across the National Mall, and it was an ocean of humanity. The crowd stretched from the gate outside the Capitol lawn all the way to the Washington Monument and beyond.

Since I could wander around, I could see people enter the VIP area. Celebrities and people from all walks of life arrived and rubbed shoulders and elbows and shared the mounting excitement. I saw Tom Hanks, Jamie Lee Curtis, and other luminaries. I met veterans from World War II, the Korean War, Vietnam, and people who had never served in uniform. All took their seats and chatted as if they had known each other for years.

Sound. When the ceremony began, I'm sure the roar from the crowd as Obama and his family arrived shook the foundations of the Capitol Building. I certainly *felt* the sound.

Then President Bush came out. I used to believe



Daniel Calderon from Los Angeles District saw the inauguration of President Barack Obama up close in his role as a photographer in the U.S. Naval Reserve. (Photo courtesy of Daniel Calderon)

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Col. Janice Dombi makes USACE history as 1st female div. commander

Article by Torrie McAllister
South Pacific Division
Photo by Brooks Hubbard
Los Angeles District

Col. Janice Dombi is a history lover suddenly caught in history's spotlight. In January she became the first woman to command a U.S. Army Corps of Engineers division when she accepted the South Pacific Division colors from the Lt. General Robert Van Antwerp, the chief of engineers.

Like many of her fellow officers, she doesn't see herself as a female in the Army, but as a Soldier. Her highest admiration is for the senior women of the Engineer Regiment who have all commanded in Iraq — Col. Laura Loftus, Col. Debra Lewis, and Col. Margaret Burcham.

'I'm honored'

An education major with master's degrees in history, business management, human resource development, and strategic studies, Dombi counts herself as one of the fortunate generation of female officers whose distinguished careers helped lead the way for the regiment as the Army fully integrated women into all ranks and most military occupations.

"I'm honored," she said at the change of command. "I'm fortunate to be in the right place at the right time. Brig. Gen. McMahon was needed in Afghanistan working with U.S. Forces and NATO. But I don't think this is coincidence. I believe God has a plan for us, and it's His plan for us to be here together. Engineers love to build. They love to work. They're industrious. I look forward to that challenge."

Challenge

It's fair to say that challenge is what first enticed Dombi into the Army. She says a military career was the last thing on her mind when she started college. Then her brother went into basic training and started moaning about how hard it was. Her curiosity was piqued by sibling rivalry.

"All I heard was how bad it was, how tough it was," she said. "I thought 'I'd like to know if it's *really* that tough.' I wanted to know how I would do."

Not bad, as it turned out. Dombi enlisted in an Army Reserve program that let her go to basic training during summer vacation and finish her reserve commitment by the time she graduated. It was 1978 and the Army had just begun testing integrated basic training for men and women. Dombi was Top Trainee in her company of 200 men and 50 women.

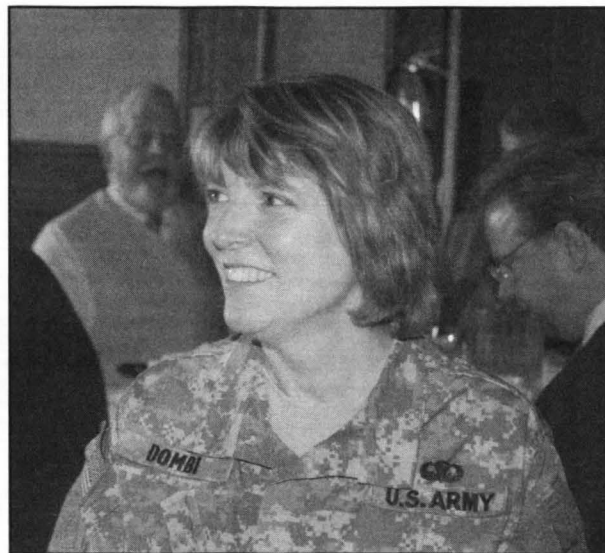
Inauguration

Continued from previous page

that the American people have class. I used to believe that we could conduct ourselves with refinement and show the world that we can rise above pettiness or bitterness. But I was proven wrong that morning.

Chant. When Bush's face showed on the Jumbotrons arrayed up and down the National Mall, thundering boos washed over the Capitol followed by the "Na-Na, Hey-Hey, Goodbye" chant. In that moment, I pitied the stupidity of people who spewed that kind of vitriol on a day that should have inspired the best in us all.

Anyway...I staked out a spot on a riser near the front of the lawn. I watched as Vice President Joseph Biden was sworn in. Then I had to hold my



Col. Janice Dombi, commander of south Pacific Division, is the first woman to command a USACE division.

Outdoor adventures enticed Dombi to start her journey toward becoming an Army officer. She had started ROTC without obligation during her freshman year to escape the desk-bound tedium of her math and science classes.

The ROTC instructor was always heading out with his students. "We're going canoeing. We're going rappelling. We're going hang gliding." Dombi said. "I thought 'I'd like to go canoeing, rappelling, and hang gliding.'"

When she graduated with a bachelor's degree from Longwood College in Virginia, she decided to make the Army her career for as long as she was having fun. After nearly 31 years she's still going strong.

Discrimination?

As distinguished military graduate from the University of Richmond's ROTC program, Dombi had her pick of Army branches. She chose the engineers because she knew it was prestigious. "I didn't really know what they did," she said. "But I knew you had to be sharp and could make a difference."

She began active duty as a training officer at Fort Leonard Wood, Mo. Dombi said, "People always want to know 'Have you been discriminated against?' When I started, women had only been in the engineer branch since 1976, and then only in headquarters. So it was still pretty new and there weren't many of us.

"One senior officer told me I didn't have any right to be an engineer," Dombi said. "I thought 'Oh man,

spot as people around me surged to get an inch or two closer as Obama took the podium. Again, I could *feel* the rumbling chuckle as Chief Justice John Roberts flubbed the oath, and then came another roar that I could *feel* as Obama completed the oath of office.

So I witnessed a moment in history. I have no idea how many people around the world shared in that moment, but with television, Internet, and radio broadcasts, I'm sure the numbers are staggering.

Impressions.

Well, my job was to document the participation of the military members, so I spent my morning running around the West Lawn shooting photos of the ushers as they helped the crowd to their places. I got high angles, low angles, wide shots, medium shots,

this is going to be tough.' Was it because I was a woman in a male profession? Was it because I didn't have an engineer degree? Was it the Army? There is a difference between discrimination and poor leadership. If I could see more than one interpretation, I would press on and do my job.

"Besides those challenges are also opportunities to win hearts and minds," Dombi said. "Often, people just don't know. The wife of one of my battalion commanders confided in me that when her husband first found out he was getting a female officer he was upset. 'But now,' she told me, 'he wishes there were more of you.'"

Far East District

Dombi tested her engineer mettle as commander of Far East District in Korea 2004-2007 where she had the opportunity of a lifetime helping the Army plan to vacate a city and build a new one for U.S. Forces in Korea. It is an incredible engineering feat because the new base at Camp Humphreys is built mostly on rice paddies.

Asked what for key lessons learned in her career, Dombi doesn't hesitate:

- Hard work pays off.
- Know your strengths and weaknesses.
- Know how to take advantage of or compensate for them.

"When I came into the Army, I knew didn't have an engineering degree and I knew I was going into a basic platoon right when West Point engineers were graduating," Dombi said. "I knew all those bright guys were coming in. I knew I would have to study even harder, and I would need to link up with really smart friends. I knew that when I was 21 years old."

Building great engineers

One challenge that Dombi believes all engineers need to tackle together is building great engineers.

"We need to get more high schools and college students interested in careers in engineering," she said. "It may seem strange that I didn't know much about engineers when I first chose the engineer branch. But that's not unusual for young people. Research shows that most of the high school students who are strong candidates for engineering schools don't know what engineers do.

"Unfortunately, research also shows that most teachers and parents don't know, either," Dombi added. "We need to help schools show young women and men what an opportunity engineers have to make a difference in the world, and have fun doing it."

and close-ups. I was so busy seeing and recording history that I didn't really participate in much of it. If I had allowed myself to get swept up in the moment, I would have missed some good shots.

Still, I felt the emotional charge in the air. Sometimes you can *feel* history change, and I've heard older folks say that they can remember exactly where they were and what they were doing when they heard about the attack on Pearl Harbor, or when John Kennedy and Martin Luther King Jr. were assassinated, or when Neil Armstrong stepped on the moon. People of this generation say the same thing about the terrorist attacks on Sept. 11, 2001.

It's too early to tell if the inauguration of Barack Obama will be a shift in history of that magnitude. But I will always remember where I was when it happened...I was *there!*

ERDC makes unique contribution to American security and way of life

Continued from page one

ning of the Global War on Terror that ERDC has won the prestigious honor.

ERDC has received the Army Lab of the Year award for 10 of the last 19 years, establishing an enviable record of excellence in the research community.

"I say it time and again — our people are the strength of this organization; they are the heartbeat of ERDC," Houston said.

ERDC's people also receive individual accolades. Dr. Kumar Topudurti, deputy director of ERDC, was just named the 2009 Federal Engineer of the Year by the National Society of Professional Engineers.

In 2008, ERDC personnel received more than 30 major external awards such as American Society of Civil Engineers Government Civil Engineer of the Year, Army R&D Collaboration Team of the Year, White House Closing the Circle Award, Installation Management Command Installation Support Professional of the Year Award, and other honors.

Since 2000, ERDC research teams have been awarded 21 Army Research and Development Achievement Awards. These awards recognize breakthroughs that improve the Army's technical capability, contribute to national welfare, and acknowledge efforts that significantly advance the state of engineering and science.

This article contains just a few highlights of ERDC's current research efforts supporting our Soldiers, military installations, and nation. For more in-depth information, please visit ERDC's Web site at www.erdcd.usace.army.mil.

Soldier support

"ERDC technologies are saving our Soldiers' lives in Iraq," Houston said. "ERDC is also helping our armed forces continue their dominance of the battlefield."

J-GES. The Joint-Geospatial Enterprise Services (J-GES) program, developed by ERDC, provides a compatible bridge between the Soldier and higher command centers. J-GES allows all levels of the Army, from the Soldier to the National Geospatial-Intelligence Agency, to quickly, easily, and accurately share and exploit all information about their operational environments — maps, imagery, geographic information, intelligence, etc.

Each Soldier can collect, update, maintain, visualize, and share their own geospatial information on compatible systems. With an improved understanding of the operational environment, our current force capabilities and effectiveness are greatly enhanced, ensuring domination of the battlefield.

Modular protective system. The surge in Iraq exposed Soldiers to new dangers as they left protected base camps and entered urban areas. The Army needed a mobile protective system, so ERDC researchers developed the modular protective system. It consists of an expandable metal frame that holds high-strength concrete panels (developed by ERDC) that have the ballistic performance of ceramic armor.

It is a lightweight system; the components are all man portable. Four untrained Soldiers can assemble an 8x10-foot section in about 15 minutes without special tools.

This protective system can provide protection from bomb blasts, small arms fire, and even rocket propelled grenades, and is deployed in Iraq now.

Mary Miller, director of technology for the Assistant Secretary of the Army for Acquisition, Logistics, and Technology said, "ERDC's modular protection system is truly amazing. Kudos to USACE for doing such a remarkable job."

Elastomeric. In Iraqi urban areas, Soldiers are typically housed in existing permanent structures such as masonry buildings, which can be destroyed



ERDC's lightweight modular causeway system was successfully field demonstrated last September. (Photo courtesy of ERDC)

by a vehicle bomb blast. ERDC created a protective elastomeric material that Soldiers can stick on walls like wallpaper. This material reduces blast effects by a factor of 15. Soldiers can easily put this material on the walls to greatly decrease the danger from bombs.

Reach-back. Another ERDC innovation is "reach-back" capability. Portable secure communications systems allow deployed Soldiers to contact subject matter experts at ERDC for answers to engineering problems — roads, airfields, buildings, bridges, force protection, potential flooding, etc.

The USACE Reach-back Operations Center (UROC) gets about 2,000 requests a year from combat engineers in-theater. UROC has more than 160 communications kits deployed around the world. The UROC kits can also be used in disasters and other emergency operations.

Force protection. ERDC technologies are also improving force protection. Recently in Australia, engineers from all four U.S. services and the Australian army and air force, troops who had not trained together, built an airfield from scratch in 14 days, using lightweight equipment that can be air-dropped. They built taxi aprons in only 48 hours.

The demonstration proved that ERDC technology could triple normal aircraft throughput. These technologies help give the Army the capability to go anywhere in the world.

For force projection through sea ports, the Army plans to use new joint high-speed vessels. But if ports are damaged or inaccessible, the vessels will need causeways or ramps to unload equipment. ERDC developed the Lightweight Modular Causeway System for this purpose. A lightweight fabric material is pumped up with seawater to float the innovative causeway. The causeway will float even if the floatation is shot by the enemy, and the system is strong enough to carry even main battle tanks.

ERDC conducted a full-scale demonstration in Hawaii late last year. The causeway system is fully collapsible and lightweight, so each of the new high-speed vessels can carry the system onboard.

Remote sensing. ERDC is even synthesizing nanomaterials to serve as optical reporters for the next generation of remote sensing applications. These

materials are uniquely tunable and could be used to report chemical, biological, or radiological threats in the operational environment, or they could be used for tracking purposes.

ERDC is doing exploratory work on direct tagging and labeling of targets and observation using laser-induced fluorescence and other methods. Such capabilities would greatly enhance operations in the field in multiple scenarios.

Military installations

Research supports military installations in many critical ways as new technologies, tools, and methods are developed to help Army installations modernize, transform, and provide optimum training while maintaining environmental stewardship of military land.

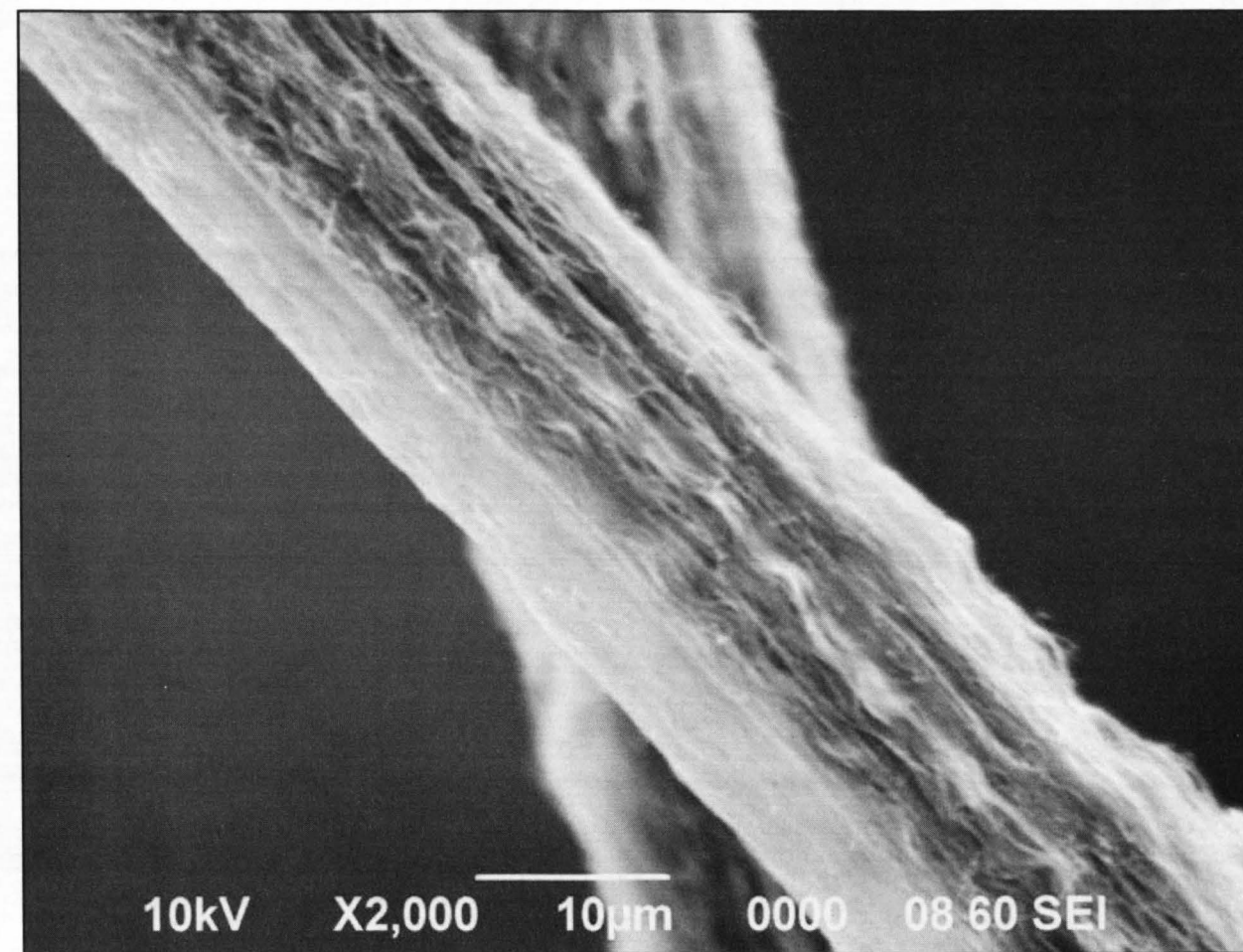
Projects are looking at everything from military buildings and facilities, to detecting unexploded ordnance, to containing lead on firing ranges, to the impact of training on threatened and endangered wildlife.

COBIE. Nearly all information needed to operate and maintain a building at a military installation is created at some point during a project's design and construction. ERDC's Construction-Operations Building Information Exchange (COBIE) facilitates open building standards as part of a major national effort to revolutionize the facility delivery process. By using building information modeling information and COBIE's open standards, designers, builders, and installation facility managers will have open interchange with powerful computer tools used in the architectural-engineering-construction industry.

USACE is using COBIE for all military construction projects. It is an enormous enhancement for designing, building, managing, and maintaining military facilities.

Wildlife. ERDC's research with threatened and endangered wildlife also plays a crucial role in the effective Soldier training.

"There were about 80,000 acres at military installations in the Southeast that could not be used because it was believed that training impacted an endangered species of woodpecker," Houston said.



This filament contains hundreds of thousands of carbon nanotubes. These were grown at ERDC under the Carbon Nanotube Technology for Military Engineering Program. (Photo courtesy of ERDC)

"ERDC biologists discovered it wasn't Army training affecting the bird populations, but feral animals that attacked the birds in their nests. We came up with ways to protect those nests, and the bird population increased. Our work helped convince regulatory agencies to allow training to resume."

BUILDER. The Army requires installations to implement sustainment management systems for facility maintenance, repair scheduling, and asset management. ERDC's BUILDER sustainment management system is a software application that performs these functions for military buildings.

BUILDER stores real property building information. More detailed system inventory is modeled or collected, which identifies building components and their key life-cycle attributes such as age, material, and capacity. It also employs a patented knowledge-based inspection scheduling process to keep inspection costs low.

ERDC is negotiating multiple licenses with private industry to make BUILDER available to installations and other users quickly at a competitive price.

Civil works and emergency operations

ERDC's civil works research covers a broad spectrum of projects and programs — navigation, flood and coastal storm damage reduction, environment (wetlands restoration, threatened and endangered species, invasive species, dredging, and contaminated sediments and groundwater), and regional and watershed applications.

In recent years ERDC has made major advances in hurricane and storm surge modeling, system-wide water resources, and fisheries (juvenile salmon and endangered species).

Levee safety. The Remote Sensing/Geographic Information Systems Center at ERDC is building a National Levee Database as part of the National Levee Safety Program. The database will provide access to information for more than 14,000 miles of levees under USACE authority. The initial effort is storing



At minus 20 degrees Fahrenheit, a researcher evaluates ground penetrating radar systems to detect oil under and frozen within ice at an ERDC test basin. (Photo courtesy of ERDC)

detailed information from the levee inventory process; updates will compile critical info about individual levees.

This effort will help ensure levee safety and assist other agencies working with floodplain or emergency management. This centralized levee information and future inventories will help identify risks to public safety and will aid comprehensive and risk-informed approaches to levee safety.

Antarctica. As part of the International Polar Year, ERDC's Dr. Mary Albert served as the lead U.S. partner, with assistance from Dr. Zoe Courville, in the Norwegian-American traverse across East Antarctica. The first leg is a 1,740 mile route from Troll Station, a permanent Norwegian research facility, to the U.S. South Pole Station, followed by a return trip to Troll Station.

These expeditions collect a variety of data on climate history, snow accumulation, and glacial dynamics. The team is also conducting innovative educational outreach with schools while in the field.

Emergency response. ERDC's DoD Defense Sup-

port to Civil Authorities Automated Support System (DDASS) is a Web-enabled software tool that permits the military to coordinate and prioritize disaster relief.

Coordination that relied on e-mail, phones, and faxes was slow and cumbersome. DDASS quickly provides a graphic status of individual or multiple mission assignments, making it an invaluable tool to rapidly assess the status of support to individual and multiple incidents, including funding.

DDASS also allows electronic coordination between civilian and military organizations from multiple origins. ERDC is looking at improving DDASS by adding CorpsMap, which would provide current infrastructure and waterway sensor data.

Other ERDC efforts are exploring innovations for disaster response. Last fall ERDC used a large water-filled bladder to plug levee breaches. The successful demonstration provides an alternative for levee emergencies in the future.

ERDC's unique research facilities are used by government agencies, industry, and academia to improve response for oil spills in ice-covered waters. Research is looking at new technologies to detect oil trapped under or within ice, and herding agents are being tested that thicken oil slicks in icy waters to allow cleanup.

National asset

ERDC research is impacting our lives, and even saving lives. Research is leading to fundamental breakthroughs that could revolutionize our way of life.

Sept. 11, 2001. "We were credited with saving hundreds of lives in the Pentagon on Sept. 11, 2001," Houston said. The jetliner struck an area of the Pentagon that had recently been renovated using protective technologies developed by ERDC.

"We have photos of offices 50 feet from where the plane hit," Houston said. "The windows and walls were undamaged, and people there lived. We also have photos of offices 300 feet from the plane's impact that had not yet been protected with our technologies. In these offices, the windows were blown out, portions of the inner walls came apart, bricks were thrown throughout the rooms. They were severely damaged."

These technologies have been updated through continual ERDC efforts and are used to protect government buildings and structures from potential terrorist attacks. Protective technologies that are not classified or proprietary are shared with the private sector.

Carbon nanotubes. Carbon nanotubes, a new material lighter and much stronger than Kevlar, are under development by ERDC's Carbon Nanotube Technology Program.

With a strength-to-weight ratio 750 times that of high-strength steel, carbon nanotubes have great promise, but they can only be grown to lengths up to a few millimeters, which is not long enough for weaving strong fibers.

ERDC researchers are collaborating with the Massachusetts Institute of Technology, NASA, and Rice University to produce larger formations of carbon nanotubes. The team just synthesized a new class of carbon nanotubes, carbon millitubes. This is a major discovery in developing carbon nanotubes for military applications.

This ERDC-led research may eventually provide stronger, lightweight aircraft, vehicles, body armor, and other military products. And as with many military technologies, this work may also lead to carbon nanotubes becoming a major construction material for buildings, bridges, and even cars.

(Engineering Research & Development Center press release.)

MV Strong crew removes power line

By Stacy Ouellette
Memphis District

Six crewmembers from the *Motor Vessel Strong* helped recover a fallen power cable across the Mississippi River two miles upstream from Tiptonville, Tenn., on Jan. 27.

"We heard the broadcast notice to mariners from the U.S. Coast Guard on marine channel 16," said Capt. Tony Johnston, master of the *MV Strong*. "We immediately contacted them to offer assistance. Due to the ice storm, the Coast Guard was unable to send anyone to the site."

Ice accumulation during the storm caused the power cable to break away from the overhead lines. A pilot from American Commercial Barge Line told Johnston that his vessel was crossing underneath the lines when it came down.

Light show

"The pilot said there was quite a light show," Johnston said. "On the east side of the river the wire fell into the water at the river's edge. On the west side, about 400 feet from the bank, it draped over the power cables below it, then into the water. Luckily, there was only minor damage to the vessel."

The Coast Guard temporarily shut down the channel in the affected reach of the river to protect other vessels. For 22 hours, that section of the Mississippi River looked like a traffic jam, according to Johnston. There were eight vessels traveling southbound and 25 traveling northbound that halted when the channel was closed.

Calls

The *MV Strong* received a call from the Coast Guard requesting that they assist technicians from the Missouri Power Company, who were dispatched to recover the cable.

"We contacted the power company, no small feat considering the status of cell phone communication due to the storm," Johnston said. "We offered to take their team to the site to assess the situation."

Johnston said the power company's technicians had to literally cut through downed trees blocking the roads on their way to reach the site.

To properly position the vessel for the technicians to cut the power cable, Johnston directed operations from the deck of the *MV Strong's* buoy barge while assistant master Gary Arwood maneuvered the *MV Strong* and the buoy barge into position.



(Above) The broken power line dangles above the Mississippi River. (Right) The crew of the *MV Strong* (l-r) Capt. Tony Johnston, Gary Arwood, James Dulin, Mack Hatton, and Dustin Adams. Robert Morton is not shown. (Top photo by Tony Johnston, right photo by Stacy Ouellette, Memphis District)

"Gary had to hold the vessel motionless in the current for several minutes while Frankie, one of the technicians, cut the wire," Johnston said. "We then moved to the east bank to cut the wire on that side from the bank."

After the power team disembarked from the *MV Strong*, the crew positioned two green can buoys to route vessel traffic away from the hanging wire.

"We relayed our success to the U.S. Coast Guard and in a matter of minutes traffic was flowing again," Johnston said. The Coast Guard reopened the channel at 5:30 p.m. on Jan. 28.

Teamwork

Ensuring the safety of all was a collaborative effort of the organizations involved.

"Teamwork is always critical, especially when per-



forming operations like this so far outside your normal comfort zone," Johnston said. "The *MV Strong* stands ready to assist in any way to keep the river channel open to traffic."

HR Corner

Survey results are positive for USACE

Last year, many U.S. Army Corps of Engineers employees were randomly chosen to participate in the 2008 Federal Human Capital Survey (FHCS). The FHCS is a government-wide survey on human capital management. It gauges the attitudes of employees in four areas related to their overall work experience:

- Leadership and knowledge management
- Results-oriented performance culture
- Talent management
- Job satisfaction

The survey is conducted every two years, and was first administered in 2002.

About 5,000 USACE employees responded to the survey and we have the initial results.

The 2008 survey found that 89 percent say that the work they do is important (up 1 percent from

2006), and 85 percent like what they do in the workplace (up 3 percent from 2006). In addition, 83 percent believe they are held accountable for achieving results (up 2 percent).

Government-wide, the 2008 survey found that 91 percent of respondents say the work they do is important (up 1 percent from 2006), 84 percent like what they do (up 1 percent), and 82 percent believe they are held accountable for achieving results (up 3 percent). About 210,000 federal employees responded, from a survey sample of about 417,000 employees.

The FHCS was administered to full-time, permanent employees of the major agencies represented on the President's Management Council and the small/independent agencies that accepted an invitation to participate in the survey. The survey was conducted electronically on the Internet, with employees noti-

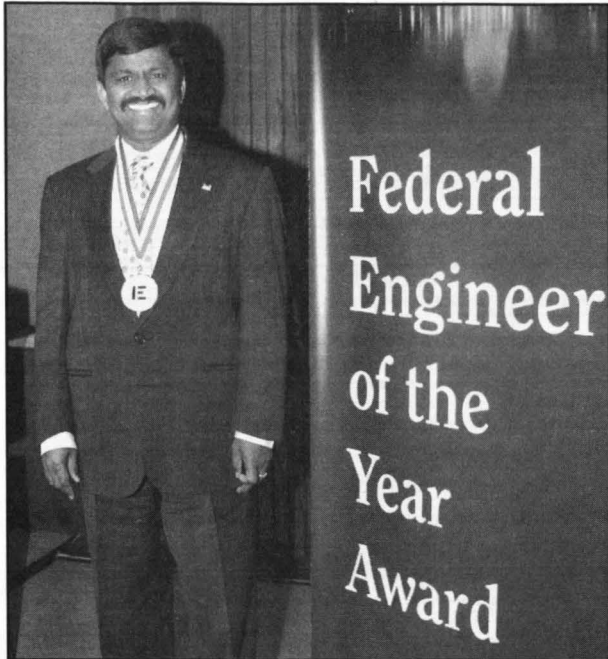
fied by e-mail of their selection for the sample. Paper versions of the survey were provided to a limited number of employees who did not have access to the Internet survey.

Government-wide survey findings are available at www.fhcs.opm.gov.

We expect to receive more survey results and we will use this feedback to make adjustments in our human capital planning where appropriate. *HR Corner* will be used to keep you updated about our efforts and to provide additional results as they become available.

We appreciate the time each employee took to respond to this survey. The information is critical to our overall assessment of our greatest resource, our employees, and how we help them do their job of helping USACE achieve its goals and objectives.

Around the Corps



Dr. Kirankuman Topudurti.

Federal Engineer of the Year

The National Society of Professional Engineers has selected Dr. Kirankuman Topudurti as the Federal Engineer of the Year. Topudurti, deputy director of the Engineer Research and Development Center, was recognized for his contributions to environmental engineering.

He has authored 38 referred publications, presented more than 50 national and international conference papers, served as environmental technology delegate to Russia and Ukraine, is a member of the EPA Science Advisory Board, and currently provides leadership in developing and executing a \$100 million research and development program.

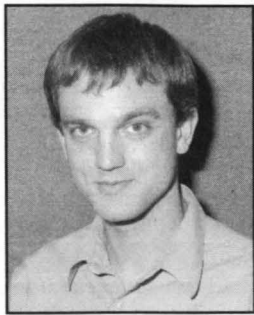
He has advanced more than 20 innovative hazardous waste treatment, sampling, and measurement technologies, including implementation at more than 100 hazardous waste sites.

Topudurti's research has advanced the science behind E-beam technology, which exposes contaminated water to high-energy electrons, improving destruction of toxic organic compounds and reducing the toxicity of contaminated groundwater. He also provided important research for rapid, cost-effective cleanup of petroleum hydrocarbon contamination.

New Face in Engineering

The National Engineers Week Foundation has named Timothy Ernster to their list of New Faces of Engineering for 2009. Ernster, an engineer with Gulf Region Central District, has managed electrical distribution projects in Baghdad under difficult, demanding conditions. He is responsible for the ongoing construction of a National Training Center that, when completed, will serve as hub for developing technical skills for Ministry of Electricity technical personnel.

Ernster is currently guiding to completion two substations that will provide electricity to the Sadr City district of Baghdad. In his regular job, he works as an electrical engineer in Walla Walla District.



Timothy Ernster.

Donate pencils to GRD

Gulf Region Division marked its fifth anniversary Jan. 25. To celebrate five years of reconstruction progress in Iraq, GRD is starting the Marking His-

tory campaign. In keeping with the traditional fifth anniversary gift of wood, GRD will collect wooden pencils. Throughout the year, GRD will distribute the pencils to Iraqi schoolchildren.

Providing the children of Iraq with modern schools and eliminating overcrowding has been a GRD priority. As of January, GRD has completed more than 1,100 schools with dozens more under construction. Schools built of mud with no heating or air conditioning and inadequate facilities are being replaced with modern buildings built to international health and safety standards.

Pencil donations for the Marking History campaign can be sent to:

Marking History Campaign
GRD G3
APO AE 09348

For tracking purposes, please mark both inside and outside the box with how many pencils are enclosed. New, plain pencils are appreciated. Please avoid sending pencils with cartoon characters, specifically those with female forms, such as Barbie and Disney princess characters.

ASCE award

Larry Smith with Sacramento District's Construction Operations Division has been honored with the 2009 Construction Management Award from the American Society of Civil Engineers.

The award is presented by the ASCE to recognize contributions in construction management, especially applying theoretical aspects of engineering, economics, statistics, probability theory, operations research, and related mathematical disciplines.

Smith was chosen for his "outstanding leadership and innovative management of the construction of significant major infrastructure projects, his mentoring of future construction management leaders, and his many contributions to the construction management body of knowledge," said ASCE Executive Director Patrick Natale.

Meritorious Unit Commendation

Military service members assigned to Gulf Region Division for six months or longer between Jan. 1, 2006 and Dec. 31, 2007 are authorized to wear the Meritorious Unit Commendation (MUC), according to an order issued Jan. 27 by the U.S. Army Human Resources Command.

The MUC is awarded to units in recognition of meritorious conduct during military operations against an armed enemy. The commendation recognizes Gulf Region Division's role in combining the reconstruction efforts of multiple agencies into a single, unified effort. GRD is also recognized for its dedication and willingness to undertake any mission, making huge advances toward transitioning responsibility for the country's infrastructure to the government of Iraq.

Award-winning Web site

The Public Relations Society of America, New Orleans Chapter, recently awarded Team New Orleans' new Web site with the 2008 Award of Excellence.

Creating a uniform presence on the Web to provide relevant, accurate, timely information is an important part of the USACE re-branding effort. Team New Orleans was the pilot district to test the new Web site design and operation.

Besides a new look and feel, the Team New Orleans site has been drastically consolidated, shrinking from more than 30,000 HTML pages to about 1,000. The platform no longer overwhelms a user with information, nor disorients a user with redundant or conflicting information.

A key development has been integrating post-Katrina knowledge. The new site showcases the

Greater New Orleans Hurricane and Storm Damage Risk Reduction System, and details post-Katrina repair and construction. A brand new information system, which presents geographically referenced data using Microsoft Virtual Earth, now features the latest project-specific information.

One of the most significant improvements in the site design is the static horizontal navigation menu, from which all of the key public touch points are accessible. There is also a "breadcrumb trail," a navigation technique that allows users to keep track of their location. Rounding out these features is a search mechanism powered by Google.

Please visit the Team New Orleans Web site at www.mvn.usace.army.mil.

National Inventory of Dams

The 2007 National Inventory of Dams (NID) database is available at <https://nid.usace.army.mil>. NID contains information on about 82,000 dams throughout the U.S. The data are maintained and published by USACE in cooperation with the Association of State Dam Safety Officials.

NID contains information from all 50 states, Puerto Rico, and 16 federal agencies. The 2006 Dam Safety Act reauthorized the maintenance and update of NID. The database has dams that meet at least one of the following criteria:

- High hazard classification — Loss of human life is likely if the dam fails.
- Significant hazard classification — Possible loss of human life and likely significant property or environmental destruction.
- Low hazard classification — No probable loss of life and low economic and/or environmental losses.
- Equal or exceed 25 feet in height and exceed 15 acre-feet in storage.
- Equal or exceed 50 acre-feet storage and exceed 6 feet in height.

To query the database, users must request a username/password from the NID Login tab. Because it is on a secure site (https), all users must accept the Defense Department certificate to continue. Users who do not request a username/password can view summary charts and graphs about all the dams per state or a national basis.

"The new search engine is different than the previous site and a short PowerPoint tutorial is provided," said NID program manager Rebecca Ragon at the Topographic Engineering Center. "The dams can also be viewed as dots and queried on CorpsMap. A future enhancement is mapping the database search results on the interactive map."

Updated information collected in 2008 will be included in an updated database in late 2009.

Dam conference

USACE will host the 2009 U.S. Society on Dams (USSD) Conference in Nashville, Tenn., April 20-24. Dam safety personnel from the Corps are encouraged to attend.

This is the first of three dam safety conferences in 2009. The USACE Infrastructure Systems Conference is set for July 20-24 in Cleveland, and the Association of State Dam Safety Officials Conference in Hollywood, Fla., Sept. 27 through Oct. 1.

The 2009 USSD Conference theme is "Managing Our Water Retention Systems" to address state-of-the-art practice for operating, maintaining, rehabilitating, and upgrading dams, reservoirs, and levees that provide the lifeblood of modern society.

This conference will bring together technical ideas and solutions that have been developed and implemented on many levee and dam upgrade projects.

An overview and full information are available at <http://www.ussdams.org/09conf.html>. For more information, contact Charles Pearre at (202) 761-0338 or Charles.M.Pearre@usace.army.mil.

Ice storm worker aids at accident scene

By Todd Hornback
Louisville District

He was in Kentucky to check on generators set up to provide power after the recent ice storm that hammered the western part of the state.

He ended up talking someone through a near-death experience.

Charles Stroup, a quality assurance inspector with Pittsburgh District, was in Madisonville, Ky., supporting Federal Emergency Management Agency operations by inspecting generators at the Kentucky State Medical Examiner Office when he saw something go terribly wrong.

A mechanic was servicing a car across the street, and the engine started with the car in gear. The car rolled over the mechanic, and continued coasting through a parking lot before crashing into an abandoned building.

Stroup ran across the street to help, and immediately met the mechanic's distraught wife.

"I told her to call 911, and I told her not to worry and stay calm," Stroup said.

In his regular job, Stroup is a lock and dam operator at the Bill Young Lock and Dam near Acmetonia, Penn. The U.S. Army Corps of Engineers requires lock and dam operators to be trained in emergency response.



Charles Stroup with a generator similar to the ones he inspected during the ice storm. (Photo courtesy of Louisville District)

"We have to know CPR and have a refresher course annually," Stroup said.

Although Stroup did not have to perform cardiopulmonary resuscitation or first aid, he reassured the victim and his wife that if the man's condition declined, Stroup knew what to do. "It helped to keep the person calm. I stayed with him and talked with him and made sure he was all right."

Marie McCullough, a co-worker of Stroup's from

Pittsburgh District who also volunteered to work at the Louisville Emergency Operations Center during storm recovery, said Stroup's actions were not out of character.

"This is no surprise," she said. "I'm proud he was able to do this."

Stroup remained at the scene until the fire department and emergency medical services arrived and transported the victim to the hospital. Then he went back to the mission of inspecting USACE-installed generators.

Stroup worked with the power response team stationed at Fort Campbell, Ky., the staging area for generators used at facilities across the state. USACE installed more than 160 generators at critical facilities — hospitals, churches, nursing homes, local and state government buildings, and other institutions across the 93 counties ravaged by the ice storm in Kentucky.

As a quality assurance inspector, Stroup made sure the generators were working properly, noted if power had been restored, reported any vandalism of the equipment, and confirmed that generators were not causing environmental hazards from leaks or other problems.

Stroup checked on the accident victim, but as of press time had not received a report on his condition. "I hope he is doing well," Stroup said.

Ice storm

Continued from page one

homes dipped below 30 degrees and water pipes froze and burst, wreaking more havoc.

"For every inch of ice on an electric wire, 500 pounds of pressure weighed upon it," said Norris Orange, a local contractor working for USACE. Corps debris removal specialists often compared the extra weight to a gorilla hanging from a vine.

Response is 'personal.' Ninety-three counties in Kentucky that were ravaged by the ice and cold weather received services from USACE. The disaster assistance team included USACE employees from across the nation working with the Commonwealth of Kentucky and Federal Emergency Management Agency (FEMA).

They provided industrial-size generators to power critical facilities, and assisted with clearing trees, downed power lines, and poles from roadways. Generators went to churches, city government buildings, nursing homes, water treatment facilities, penitentiaries, and hospitals.

"This ice storm was personal for Louisville District, said Col. Keith Landry, Louisville District commander. "We have the expertise to provide an emergency service, and most of our 1,200 employees live in Kentucky and experienced these challenges first-hand. We did our best to take care of our neighbors, our homes and families, and the public."

More than Katrina. Pittsburgh District employee David Bishop, who served on the power response team, immediately volunteered to join the Kentucky emergency operations mission.

"We installed more generators in Kentucky than in Texas for Hurricane Ike, and more than for Katrina," he said. More than 160 generators were installed in freezing temperatures, and USACE performed 255 pre-installation assessments across the western half of Kentucky.

"It is a huge team effort, and many Corps employees from across the nation united to support Kentucky in their power and road clearing needs," Landry said.

USACE contractors worked alongside FEMA contractors. Utility companies and Kentucky state contractors installed the generators. In one sparsely populated rural area alone, more than 200 poles and live



Robert Moreno, a quality assurance specialist from Sacramento District, oversees debris clearing. (Photo courtesy of Louisville District)

wires were downed in a domino effect.

Improved contracting. A new advanced contracting initiative (ACI) with IAP Worldwide quickly provided services and suppliers for Kentucky's emergency response needs.

"Nothing happens unless every piece of the puzzle fits," Bishop said. "Everyone is pleased with the new ACI contract's trial run on a large-scale power mission, and with the IAP partnership."

"We're proud to be a part of the team," added Scott Leonard of IAP Worldwide's Emergency Services Division in Irmo, S.C.

Debris clearing. USACE also worked with the Kentucky Transportation Cabinet to help move debris from roadways. More than 25 eight-man, USACE-contracted clearing crews worked in 21 western Kentucky counties with trucks and power saws to open roadways in the affected areas.

"Cherry pickers used by the debris-clearing contractors were especially helpful to make traveling safe," said Roy Tyler, a Louisville District quality assurance inspector in Hopkinsville to ensure that tree and landscaping contractors did a thorough job.

Contractors arrived quickly from Ohio, Mississippi, Arkansas, Michigan, Wisconsin, and the East Coast to remove dangling branches that hung precariously over roads. They were able to do so because USACE

teams worked long hours to expedite logistics and deploy personnel to support emergency missions.

"The Corps team moved with incredible speed to get the generators in," said Brig. Gen. John Hertzell, the state emergency management coordinator. "There was good coordination with the state to make the mission happen."

Critical list. Following the devastating storm, the 249th Engineer Battalion (Prime Power) coordinated a statewide power assessment of critical facilities, working with the Kentucky National Guard. This critical facilities list established priorities and the type of support needed, and dispatched it efficiently.

The critical list included hospitals, 24-hour warning points, 911 call centers, nursing homes, shelters, correctional facilities, county emergency operations centers and National Guard armories. It added up to about 2,030 facilities statewide.

The power response team at Fort Campbell, Ky., set up the staging area for generators used at facilities across the state. Fort Campbell is a pre-determined National Logistics Staging Area, which worked out well because it is close to the western part of the state where rural areas were especially hard-hit.

Recognition. At the annual State of the Commonwealth, Gov. Steve Beshear recognized the Corps' contributions to the ice storm relief. Brig. Gen. John Peabody, Great Lakes and Ohio Rivers Division commander, stood with FEMA Acting Administrator Nancy Ward, State Adjutant General Maj. Gen. Edward Tonini, and Hertzell as the governor praised the team.

"It was a great honor to represent the 150 USACE professionals who are working so hard alongside FEMA and Kentucky's state and local authorities to provide relief," Peabody said. "We remain committed to providing all required resources to help the people of Kentucky."

"It was vitally important that the Corps' work countered any potential loss of life," Landry added. "We helped to keep people safe."

Deinstalling (removing) all of the generators is part of the remaining mission. As of Feb. 19, 106 generators have been deinstalled. All of the generators will be deinstalled in the next several weeks.