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# Public Works

## *Digest*

*In This Issue...*  
**Energy**



US Army Corps  
of Engineers®



## US Army Corps of Engineers®

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Address mail to:

Department of the Army  
US Army Corps of Engineers,  
Directorate of Military Programs,  
Installation Support Division  
Attn: Editor, *Public Works Digest*,  
CEMP-IS  
441 G Street, NW  
Washington, DC 20314-1000  
Telephone: (202) 761-5778 DSN 763  
FAX: (202) 761-8895  
e-mail: alex.k.stakhiv@usace.army.mil

**Kristine L. Allaman, P.E.**  
Chief - Installation Support Division,  
Directorate of Military Programs

**Alexandra K. Stakhiv**  
Editor - Installation Support Division,  
Directorate of Military Programs

**Design and Layout:**  
Barbara Morris  
RPI Marketing Communications  
Baltimore, MD

**Cover photo:** Wind turbines represent an alternative energy source that could be considered for DoD facilities.



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## LETTER FROM THE EDITOR



After 15 years, the proponentcy for the *Public Works Digest* is changing hands. This will be the last issue with the *Digest* as a U.S. Army Corps of Engineers (USACE) publication. The Installation Management Agency (IMA), an ACSIM field operating agency, will become the *Digest* proponent on 1 October 2003. IMA was created this year to provide command and control of Army installation management activities worldwide, including installation DPW operations. Therefore, in accordance with the Transformation of Installation Management (TIM), proponentcy for the *Public Works Digest* is being transferred from HQ USACE to HQ IMA. Current plans are for USACE to continue to prepare and publish the *Digest* in support of HQ IMA. Details of all this are being addressed in the USACE 2012 planning.

I am pleased to report that I will remain as the managing editor and we will continue to provide the same quality information you have become accustomed to in publicizing installation public works activities, technology and processes. It is vital to the Army's public works business that we keep a clear focus on effective communication within this specific functional area as it affects so much of the Army's readiness and overall mission accomplishment. While there may be some editorial or format shifts down the road, no immediate changes are proposed.

The September/October *Digest* is our traditional Energy Management and Water Conservation issue. It covers a broad spectrum of articles from the Secretary of the Army energy awards to installation successes to innovations in technology to changes in policy. The latter includes an important article on the centralization of the utility privatization process, which requires using the Defense Energy Support Center (DESC) for all future utilities privatization procurement actions.

As this issue closed, a surge of electricity to western New York and Canada touched off a series of power failures that left parts of at least eight states in the Northeast and the Midwest without electricity. In the Energy Management section, ACSIM's Hank Gignilliat tells us about the risks involved in relying entirely on the grid and how to enhance energy security, while CERL's Dana Finney explains how fuel cells kept some of the Navy's housing powered during the blackout.

As always, many installations submitted articles detailing how they have conserved energy and saved money over the past year. Read all about the regional approach that Alaska took in its energy study, how Picatinny Arsenal privatized its electrical system, where Fort Bragg is testing new off-grid lights, and how Fort Sill is controlling mold with electro-osmotic pulses.

The Professional Development and Training section covers several recent workshop and conference summaries, including the Department of Energy's Annual Energy Workshop, the CP-18 Managers Workshop, the SAME Energy Efficiency and Sustainable Design Workshop, the Army Energy Management Forum as well as an ESPC Industry Forum. It's the second best thing to having been there.

An article on USACE activities stands out as non-energy related. There's a lot going on with the Functional Area Analysis at Headquarters and we want you to be informed. Finally, the *Who's Who* section introduces newcomer Muthu Kumar, IMA's Energy Program Manager; and highlights Satish Sharma, ACSIM's energy guru for the past decade.

The November/December issue of the *Digest* will be our Annual Report to you on the things we have accomplished over the past year. We encourage all installations and organizations providing installations support to share their successes as well. Remember to be planning your participation in the DPW Worldwide Workshop the first week of December. We look forward to seeing you there.

Until next time...

*Alexandra K. Stakhiv*

Alexandra K. Stakhiv, Editor, *Public Works Digest* **PWD**



## 25th Annual Secretary of the Army Energy and Water Management awards

**D**ue to the recent change in leadership, this year's Secretary of the Army Energy and Water Management awards will not be presented until the DPW Worldwide Training Workshop in December 2003. As expected, the Army has continued to make great strides over the past year in both energy and water management and conservation. Despite the fact that national consumption continues to grow, Army installations have consistently lowered their annual energy usage for the last two decades.

Energy managers are always looking for ways to demonstrate new technology as energy solutions for commercial, industrial and federal customers. There are many outstanding champions of the Army's energy program. This year the following individuals/installations have been selected as recipients of the 25th Secretary of the Army Energy and Water Management awards and will represent the Army in the Federal Energy and Water Management award competition. Congratulations to all the nominees and winners!

### Active Installations:

#### **U. S. ARMY INTELLIGENCE CENTER AND FORT HUACHUCA**

During FY02, the United States Army Intelligence Center and Fort Huachuca diversified its portfolio of renewables with wind power while increasing other existing forms of renewable power. Fort Huachuca

also reduced water consumption by 7.5 percent (42 million gallons) from FY01. Fort Huachuca achieved this through the positive efforts of all organizations and a concerted effort to implement cost-effective energy conservation, water conservation, and renewable energy projects.

#### **HEADQUARTERS, 7TH INFANTRY DIVISION AND FORT CARSON**

Fort Carson has established an effective comprehensive energy/environmental management program consisting of Command emphasis, management, consumer awareness, and project implementation. The program strives for energy efficiency through a comprehensive approach that tracks energy efficiency improvements and the interrelationships of energy use, environmental quality and the ability to perform the installation's mission. The program is well-balanced, utilizing innovative project funding sources to install leading edge technologies in facility renovations, energy efficiency in new construction, and renewable energy. The successful implementation of the current program will further improve energy efficiencies, environmental quality, and support quality of life issues for installation personnel.

#### **U.S. ARMY GARRISON, TACOM ARDEC, PICATINNY ARSENAL**

The U.S. Army Tank-Automotive and Armaments Command, Armament Research, Development and Engineering Center (TACOM-ARDEC) has exceeded Executive Order 13123 by over 13% for FY02. Through Energy Savings Performance Contracting (ESPC), TACOM-ARDEC has again this year continued to improve quality of life at Picatinny Arsenal and increased energy efficiency. The ESPC energy conservation initiatives completed through ESPC in FY02 involve 13 buildings, totaling 428,192 square feet. This provided a reduction of 28,622 MBtu's and

3,425,994 kWh annually. The resulting savings in total energy cost is \$417,125 for FY02. High efficiency electric motors were installed, most controlled by variable speed drives; numerous valves were replaced; failed steam traps were replaced; and a new energy management control system (EMCS) was installed. Additionally, the Arsenal replaced many pneumatic controllers with direct digital controllers connected to the new EMCS, accomplished miscellaneous lighting retrofits in 29 buildings, installed 32-watt, T-8 lamps, and electronic ballasts, replaced incandescent lamps with compact fluorescent, retrofitted exit lights to LED type, and installed occupancy sensors. Picatinny Arsenal has a central compressed air system, which is almost 27 miles in length. Repairs to 29 leaks in this system accomplished through this ESPC project will result in an estimated yearly savings of \$45,044 or 511,000 kWh.

The U.S. Army Construction Engineering Laboratory (USACERL) selected Picatinny for a natural gas engine driven air compressor (NGEDAC) demonstration site. This project was placed on-line for the central compressed air system in FY02. Annual energy costs to produce the required airflow in the main system have decreased from \$99,500 to \$31,000, assuming a natural gas price of \$5.00 per Dekatherm.

#### **221ST BASE SUPPORT BATTALION, WIESBADEN, GERMANY**

The 221 BSB is commended for exceptional contributions to the Federal Energy and Water Management Program. Utilizing expert knowledge, experience, and innovation, Wiesbaden developed several energy-related projects and completed four major utility privatization initiatives during FY02. These efforts resulted in significantly improved utility operations and maintenance, and have laid the cornerstone for future improvements to readiness, environ-



mental quality, and efficient use of resources. In FY02, Wiesbaden had a total savings of 78% in consumption over the previous year. This was achieved despite the increases in facility utilization and energy usage through restraining action, which took place in 2001-2002 and considerably increased the number of units operating in Wiesbaden. However, given the plans for continued improvements in energy efficiency, Wiesbaden will meet or exceed the goal of reducing energy usage per square foot by 30% for the next fiscal year. The energy consumption in 2002 was 697,142 MBTU/KSF against 549,881MBtu/KSF, or \$287,480.00.

#### **U.S. Army Reserve Command:**

##### **HEADQUARTERS, U.S. ARMY FORT DIX**

Fort Dix achieved a 48% reduction in facility energy usage per square feet in FY02 when compared with the FY85 baseline. Comparing the utility costs of FY 85 with FY02, Fort Dix shows an adjusted fuel cost savings of \$3,772,230 for FY02. These results were achieved by upgrading lighting post wide; decentralizing two boiler plants, using the Energy Savings Performance Contract between Honeywell and United States Army Reserve Command; a proactive Energy Conservation program that is spread throughout the Fort Dix community by the Public Affairs Office. The e-mail system and the post newspaper are used to give energy savings tips during the heating and cooling seasons.

#### **Individual Achievement:**

##### **BILLY B. DANCY, JR.**

Mr. Dancy works in the Public Works O&M Branch, NorthEastern Region, IMA. As a result, HQ TRADOC, spearheaded by Mr. Dancy, made the commitment to aggressively pursue implementation of Energy Savings Performance

Contracting (ESPC) and Utility Energy Savings Contracting (UESC) projects. This effort was accomplished by developing a unique funding policy, which allowed installation ESPC/UESC obligations to be reported and captured as fixed costs for approved projects, and picked up by TRADOC's utilities requirements model as a must fund bill. This provided a strong incentive for installations and resulted in a dramatic increase in development and award of ESPC/UESC projects, including participation by all 15 TRADOC sites. Through FY02, TRADOC installations awarded 15 ESPC projects (\$63.3M) and 61 UESC projects (\$41.0M), for a total private sector investment of over \$100M. New projects totaling \$20M are pending. Once all awarded projects are fully implemented, estimated annual energy savings will total 854,000 MBtu's, with a life cycle cost savings exceeding \$250M. These savings are equivalent to the entire annual energy consumption of a moderate-sized Army installation.

##### **JEFFREY K. MUNEKATA**

Mr Munekata is the Energy Coordinator for HQ, US Army Training and Evaluation Command. For the past several years, he has been instrumental in achieving significant success in energy conservation at the three installations under his supervision (Dugway Proving Ground, Yuma Proving Ground, and White Sands Missile Range). Last year, he was personally responsible for the development and management of the Super Energy Savings Performance Contract (ESPC), enabling the three installations to accomplish greater energy conservation and renewable energy projects at no cost to the installation or to the government. In addition, he supervised a robust Energy Conservation Program over three states resulting in the saving in FY02 of over 33.5 percent in energy consumption avoidance compared to the Base Year of 1985.

##### **MAJ DUANE P. COVINO**

MAJ Covino is the Energy Program Manager for HQ NGB. During the making of Energy Conservation Opportunity (ECO) projects for available funding, MAJ Covino mandated the prioritization of projects according to economic analysis and life cycle cost analysis (LCCA). To further support this LCCA tool, he issued guidance to the 54 ARNG energy managers that simple payback period (SPP) and savings-to-investment ratio (SIR) information must be placed on the documents from the State ARNG Energy Managers requesting funding for specific ECOs. He directed the contractor for the MACOM-contracted energy audits to modify the audit report format to present the tables of ECOs, order-ranked by selected economic analysis data to make project prioritization easier. He also provided a standardized LCCA worksheet to request funding for ECOs not included in recent MACOM-contracted energy audits.

MAJ Covino worked hard to ensure that appropriate State ARNG personnel are trained in Energy Management and E.O. 13123, both with classroom training and "on-the-job training." For example, he prepared and presented a RADDs 2 training class to appropriate ARNG personnel, using this database/software training class to teach energy metrics essential not only for implementation of the Executive Order, but also for proper stewardship/investment of taxpayer dollars. Further, he was an assistant instructor for the two-week-long State ARNG Energy Manager Training classes. This class included not only energy managers at installations, but their personnel from purchasing (to influence and effect purchase of Energy Star retrofit products), finance, and maintenance management. **PWD**



## Update on utilities privatization

by Derya Smith and William Kenealy

In the March 1995 issue of the Public Works Digest, BG Robert Herndon, the first ACSIM Director of Facilities and Housing, authored an article titled "Army Develops New Utilities Strategy." This proposed new strategy was to privatize our utility systems wherever feasible or modernize those utilities that will never be privatized.

The dilemma was that the Army simply did not have the money needed to revitalize our decaying utilities infrastructure. Eight years have passed since that proposal was aired and now that strategy is being implemented and is actual DoD policy. Army, as the original proponent, has a vigorous utilities privatization program and is leading the way.

The Army was the first of the military services to recognize the potential of privatizing government-owned utility systems. In December of 1997, DoD picked up on the Army's lead and tasked all of the services to privatize their utilities. This included natural gas, electricity, water and wastewater systems. The authority was part of the Defense Reform Initiative Program's Directive Number Nine, or DRID #9. Its intent was the same as expressed by General Herndon in the Digest, to turn over to private providers all installation utilities except those which affected security or were not economical to privatize.

The Army Chief of Staff for Installation Management (ACSIM) was given this task and ordered to complete it by January of 2000. The sheer number of utilities within DoD and the complicated privatization process soon became evident to the Office of the Secretary of Defense, which realized this timetable was impossible to meet. Acknowledging the many challenges, OSD issued a second DRID, #49, in December of 1998 and established new milestones.

DoD was no stranger to contracting, but it had never contracted with the utilities industry to actually own, operate and maintain utilities before, and certainly not to the extent of this DoD-wide program. The learning curve was steeper than originally thought.

Contracting for utility privatization is a complex and time consuming process. The Army has opted to get most of its contracting support from the Defense Energy Support Center (DESC) of the Defense Logistics Agency at Fort Belvoir, Virginia. The Army's Contracting Agency (ACA) assists with the contracting and will also help with the post-award contract administration duties, which grows with every new contract.

As ACSIM began to realize the scope and complexity of the task ahead, measured steps were taken to develop new tools and adapt or develop new contracting rules to fit this new challenge. First, to track progress, one of the original action officers, Richard Dubicki, designed a web based management information system called the Privatization Tracking System (PTS). The PTS helps ACSIM keep track of each one of Army's utility systems throughout its life cycle. It is designed to produce a variety of reports and to be accessible via the Internet to authorized users at all levels.

Next, a tailored economic analysis tool was developed by OSD and adopted by the Army to help determine whether privatization was economical. This was necessary because the traditional economic analysis tool, ECONPAC, was not designed for this special type of analysis. The new EA tool is called the Utilities Privatization Economic Analyses Support Tool, or UPEAST.

At the same time, a standard Request for Proposal (RFP) template was designed to better fit the new mold of Utilities Privatization contracting. The allowable contract duration was extended to fifty years to make ownership more financially attractive to eligible commercial providers.

More recently, the Army's organization for installation management was realigned and the Installation Management Agency (IMA) was established with seven Regions. IMA is already assisting by focusing closer, regional attention on installation level privatization.

### Current Status

How are we doing now? The tools and



management innovations seem to have made a big difference. We continue to lead the way within DoD in privatizing its utility systems. We have a total of 1104 utility systems, 351 in the United States, 753 in Europe, Korea and Japan. Currently, 78 systems in the U.S. have been privatized, 6 are pending award, 27 are exempt, 96 are under negotiation, 29 are not economical/no response and 115 are under contract development. USAREUR continues to take an aggressive approach, privatizing systems when in compliance with international agreements, host nation laws and regulations. To date, USAREUR has privatized 216 of 589 systems. The systems in Korea are exempted from privatization.

These numbers look good but what about quality? The Army Audit Agency helps us by auditing awarded contracts to see if the performance and savings are as expected. The real proof of the pudding, however, is the quality of the service provided to our installations and the military and civilians who live and work there.

Now that we have a substantial number of contracts in place, we are starting



# Utilities Modernization – the ultimate goal

by Henry Gignilliat

The Army's program to privatize its utilities has been making good progress. We started this effort many years before DOD adopted the idea that the private sector should be able to do a better job in this area than the Defense Department. After all, the Army and its sister Services were understandably distracted by the many more important issues of organizing, training, equipping and fielding the Armed Forces.

After years of fine-tuning our utilities privatization effort, the Army now leads the way, having privatized 78 of our 351 available electrical, natural gas, water and waste water systems. In the process of privatization, 27 systems have been exempted. The rest are either pending award, under negotiation or in some other stage of contract development. We can now finally say that there is light at the end of the utilities tunnel!

ACSIM has worked so long and consistently in the field of utilities privatization that it is easy to become distracted and rest

on our laurels. Although we would like to think all our utilities will be privatized, the truth is that some will be exempted for reasons of security or because they did not pass the economic analysis test. Since the utility systems in this exempt category will not be owned, operated and maintained (we should also add modernized) by private providers, total ownership responsibility will remain with the Army. To meet Defense planning guidance, we must upgrade Army-owned utility systems on our installations by the year 2010.

The ultimate goal is to modernize ALL of our utilities whether they are owned by the Army or by some firm in the private sector. Privatization will bring utility systems up to industry standards through private sector investment repaid through the utility bill. In order to modernize Army-owned utilities (i.e., systems we are unable to privatize and that receive a SECARMY exemption), resources are being obtained through the

planning, programming and budgeting process.

In POM 05-09, funds have been programmed for modernization of exempted utility systems beginning in FY05 for Korea and FY06 for CONUS systems. The challenge for our DPWs overseeing the Army-owned systems is to identify requirements, obtain resources and implement necessary utility upgrade projects. Modernization of utility systems, whether Army-owned or privatized, is essential to ensuring reliable, cost effective service for our soldiers and others who live and work on our installations.

*POCs are Henry Gignilliat, (703) 428-7003 DSN 328, e-mail: henry.gignilliat@hqda.army.mil; and Derya Smith, (703) 428-8030 DSN 328, e-mail: derya.smith@hqda.army.mil.*

*Henry Gignilliat is on the Utilities Privatization and Energy Team of OACSIM's Facilities Policy Division. PWD*

*(continued from previous page)*

to get feedback from the field to back up audit and other reports. The most valued testimonials come from people like John Ryder of Fort McCoy's DPW.

In his appraisal of his electrical contractor, Northern States Power Company, Ryder said, "Before privatization, we would spend hours trying to contact someone to trouble shoot the problem, reroute the circuits and repair burnt out busses. We had concerns like every other installation has regarding about response times for outages, but after several years of privatization; the Fort isn't concerned about poor service or outages. Our substation went out of service in early January and the contractor responded within an hour, had their substation experts on the job in 4 hours and had us back in service by noon the same day...the Army could not have done this in such a short time. There was no cost to the government for the work."

Under DoD policy, the services were allowed to exempt utilities from privatiza-

tion if that would be uneconomical or for a valid security reason. Army has a firm policy to avoid this type of exemption, feeling security is everyone's business and we should rely upon our utilities contractors in this regard.

Ester Lee, Chief of Staff at Fort Lee, recounted her experience with Fort Lee's new water provider, Virginia American Water Company. "Our Provost Marshall and Force Protection Officer went on site with Virginia America Water Company, our contractor, and identified the perimeter fencing as being deficient...shortly after 9/11. The contractor fixed all deficiencies within a week. They did a superb job. They also permitted us to do an ad hoc security survey of the site, and they were more than willing to assist in all respects.

In conclusion– the plan is coming together! We think General Herndon would be pleased to know of our progress. The strategy he put forth in March 1995 of privatizing or modernizing Army utilities is bearing fruit.

## Two More Milestones

Our past efforts are paying off, but there are two more OSD milestones still ahead of us. The first milestone is to close 80% of our utility privatization RFPs by the end of this fiscal year. We are now at 64%. The second is to have source selection decisions made on 65% of all our eligible systems by the end of fiscal year 2004. We are now at 54%.

If your installation is still in this program, give privatization an extra push and we can make that 1995 vision come true. The end result is not only less work for you but also better, more reliable utility service for the soldiers and the civilians who live and work on our installations.

*ACSIM POC is Derya Smith, (703) 428-8030, e-mail: SmithD3@hqda.army.mil*

*Derya Smith is the Program Manager for utilities privatization in the Facilities Policy Division, ACSIM. William Kenealy is a senior analyst with Calibre Systems, a support contractor for the Utility Privatization Program. PWD*



# Control utility costs by monitoring rate changes

by Rafael Zayas, Edward J. Gerstner, & David A. McCormick

Experts within the Department of the Army expect a significant increase in rate intervention cases in the near future. There are two reasons for this. First, the recent northeast blackout is generating a lot of political pressure on utilities companies to increase reliability of their power grids, and second, expected increases in interest rates provide an incentive now for utilities companies to acquire funds to upgrade infrastructure to stem the move to impose Federal reliability rules on them.

These power grid upgrades are expected to cost as much as \$100 billion. The utility industry proposes to pay for these costs through customer rate increases, with DoD sharing the burden. While the Army cannot estimate at this time the increase in utility rate filings, we expect new filings to be substantial. Army installations need to be in alert and take the necessary actions to mitigate/lessening the impacts of these utility rate filings to their utility budget.

Army installation energy and utilities officers and COTRs (contracting officer's representatives) should review notices received from public utilities for any proposed changes in rates or rate structure. They must also make sure that when the Defense Finance and Accounting Service (DFAS) receives the notifications, that they inform them about these notifications.

Many Army utility service contracts are tied to State regulated utility rates, pursuant to 48 CFR, Part 41 (FAR Part 41) and 48 CFR, Part 241 (DFARS Part 241). In some States, this form of regulation has changed or is changing in ways that may affect billings to Army installations. These changes are providing the Army with greater opportunities for competitively acquiring some aspects of utility services.

While traditional forms of public utility rate regulation remain in many States, some have enacted forms of utility deregulation of electric and gas service or are in the process of doing so. State regulators require notice of actions by individual utilities to be furnished to customers before any change in regulated rates is imple-

mented. Most Army contracts also provide for a notice of any proposed rate changes to be given to the involved Army installation. The notices are often sent with monthly utility billings. (Note: Some billings may go to DFAS!) If your installation receives such a notice of proposed action which may affect your billings, send it through your Installation Management Agency regional office, to the U.S.

Army Engineering and Support Center, ATTN: CEHNC-IS-FS, 4820 University Square, Huntsville, AL 35816-1822. That office handles Army liaison with State regulatory commissions. (POC is Ed Gerstner, (256) 895-1503.)

Army judge advocate regulations provide that the Regulatory Law and Intellectual Property Office handle the intervention before the State regulatory commission in any proceeding that might affect utility rates to an Army installation. (See Section 1-4k of AR 27-40.) Copies of any notices of proposed changes by regulated utilities should be addressed to Chief, Regulatory Law and Intellectual Property Office, U.S. Army Legal Services Agency, ATTN: JALS-RL, 901 North Stuart Street, Arlington, VA 22203-1837.

CEHNC-IS-FS and the Regulatory Law and Intellectual Property Office can offer installation and field activities the benefit of their substantial experience in these matters. If an intervention is warranted, the Regulatory Law Office will provide a trial counsel to represent the consumer interest of the Army.

In some cases, the Army presents expert witnesses in utility regulatory proceedings.



Rafael Zayas

These witnesses testify on a variety of topics ranging from traditional revenue requirements and rate design to industry restructuring to protect Army's consumer interest.

Decisions related to the presentation of outside expert witnesses will be made through CEHNC-IS-FS. Army installation personnel are encouraged to take advantage of these avenues to help control the costs of utility service.

POCs are Edward J. Gerstner, (256) 895-1503, e-mail: [Edward.Gerstner@hnd01.usace.army.mil](mailto:Edward.Gerstner@hnd01.usace.army.mil), and David A. McCormick, (703) 696-1646, e-mail: [David.McCormick@hqda.army.mil](mailto:David.McCormick@hqda.army.mil)

Rafael Zayas works on utilities contracting and energy policy issues in HQUSACE ISD's Installation Support Policy Branch; Edward J. Gerstner works on utilities contracting and rate intervention/litigation technical issues at the Army Corps of Engineers Engineering and Support Center, Huntsville; and David A. McCormick works on utilities regulatory law issues and rate intervention/litigation cases in the Army Regulatory Law and Intellectual Property Office. **PWD**



## Centralizing the utility privatization process

**D**efense Reform Initiative Directive #49 directed Defense components to privatize every government-owned utility system unless security concerns required federal ownership or privatization was uneconomical. Additionally, the Office of the Secretary of Defense established a goal for the Services to complete a privatization evaluation of each electric, natural gas, water, and waste water system at every Active Duty, Reserve, and Guard installation within the United States and overseas by September 30, 2005.

Recently, the Assistant Secretary of the Army (Installations & Environment) directed that all installations use the Defense Energy Support Center (DESC) for all utilities privatization procurement actions for installations in the United States. Effective immediately, all future

utility privatization actions for CONUS installations are to use DESC.

This move will help both the Army and private contractors to deal with a known contracting core completely versed in the peculiarities of the privatization business. The privatization process to transfer ownership of utility systems is extremely complex, challenging, and time consuming.

There are many issues that are unique to the program including the payment of special taxes (called a CIAC tax in the industry), determination of present value of antiquated systems that are usually buried or otherwise inaccessible for inspection, and long-term service agreements that can last for up to 50 years. They are all reasons why we need to rely on experienced contracting officers.

Installations have used various procure-

ment offices to privatize their utility systems with mixed results. While the Army has privatized 78 of its 351 utility systems, much work is still required to meet the OSD goal. To centralize the privatization process, take advantage of the concentrated expertise in contracting for utilities privatization, and focus responsibility for executing the contracting for utilities privatization on a single agency.

Using DESC exclusively for all procurement will ensure the most experienced and practiced contracting personnel familiar with all of the privatization issues will pursue the remaining 273 utility systems in the United States.

*POC is Derya Smith, OACSIM, (703) 428-8030  
DSN 328, e-mail: derya.smith@hqda.army.mil*

**PWID**

## Army on the edge of energy technology

**W**ith the current trend of energy deregulation and concerns over environment and terrorist threats, this country is looking for new, homegrown sources of energy. We are slowly going “green,” but our choices are greatly affected by the market place.

Fossil fuels are generally still cheaper, but thanks to improvements in wind technology, there are changes in the wind. Wind generated energy is gradually becoming more competitive. What could be less expensive than wind and water? As we are finding out, even water has its limitations! Wind, however, is still a free resource, and all we have to do is to “harvest” it from the skies and transform it into electrical power.

In August of 2002, the U.S. Army signed a contract to purchase electricity from the Mountaineer Wind Energy in West Virginia. This Center is called a “wind farm” for it “harvests” wind and turns its power into energy. The Moun-

taineer Wind Energy Center is over 3,300 feet on Backbone Mountain, the highest peak in West Virginia.

The Army is the first element of DoD to commit to wind power for use in the National Capitol Region (Walter Reed Health Center, Fort McNair and the Adelphi Army Laboratory Center). The supplier, Washington Gas Energy Services, stated that this purchase is the equivalent of...“taking 300 cars off the road or planting over 300,000 trees.”

The Mountaineer Wind Energy Center, the largest wind farm east of the Mississippi, was formally dedicated on July 7, 2003. Satish Sharma, Chief of ACSIM’s Privatization and Energy Branch, represented the Army at the ceremony. The Army joined other conservation-minded local organizations like the National Geographic Magazine, Catholic University and Austin Grills, Inc in paying a small premium for this wind driven “green” energy.

Wind power currently contributes only

about one percent towards the nation’s electricity requirements and is expected to supply substantially larger amounts of power in the near future. The pending Energy Bill contains much higher goals of 3-7 percent to be reached by the year 2010 and seeks to provide economic incentives to make this possible.

This first step by the Army, though a small one, is important as it sets the tone for other agencies to be active participants. The emissions-free, fuel-free wind energy allows the Washington area to help maintain good air quality and expand energy resources to meet long-term energy needs at a cost ever closer to that of fossil-fueled power.

Improvements in technology almost guarantee an ever-increasing role for wind power in the nation’s clean energy mix.

*POC is Satish Sharma, (703)428-7001 DSN 328, e-mail: satish.sharma@hqda.army.mil*

**PWID**



# Demonstration program helps reduce long-term facility operating, maintenance and energy costs

by Gary G. Bauer

Ordinarily, when a new facility is turned over to an installation for operation and maintenance at the end of construction, that facility has to compete with aging and failing facilities that have a higher priority for available O&M funds. Consequently, the new facility's needs are often deferred until system breakdowns force it to be added to the priority list. In an attempt to reverse the historical trend of providing inadequate, under-budgeted maintenance programs for new government facilities, a Demonstration Program was authorized by Congress.

As authorized by the National Defense Authorization Act for Fiscal Year 2002 and 2003 (Section 2813), the Demonstration Program on Reduction in Long Term Facility Operating, Maintenance and Energy Costs will include not more than three contracts for the program in any year. The demonstration program may only cover contracts entered into on or after December 28, 2001. The authority to include contracts under the demonstration program expires on September 30, 2006.

The referenced DoD pilot program will investigate extending the life cycle of government facilities by having the construction contractor responsible for maintaining the facilities for a 5-year period immediately following construction. During and at conclusion of the pilot initiatives, the DoD construction agencies are to report back to Congress regarding lessons learned that could be applied in the future.

During the operations and maintenance (O&M) phase of the contract, the contractor shall maintain the facility systems of the project; perform systematic preventive maintenance (PM); provide for continuous commissioning of critical systems; and perform unscheduled maintenance as necessary to:

- Assure continuous facility operations and prevent disruptions that could adversely affect the mission of the facility or complex.

- Prevent premature failure or deterioration of the facility, facility systems, and equipment constructed or installed under the construction phase of the contract.
- Be responsible for the repair or replacement on all aspects of the building.

One of the driving features of this pilot program is the notion that the construction contractor will place greater emphasis during construction on equipment selection, installation, and overall craftsmanship, knowing that they will be responsible for maintaining the facilities for 5 years after the beneficial occupancy date (BOD). The contractor shall furnish, or arrange for providing of all labor, tools, equipment, staff and management required to perform the duties included in the Statement of Work (SOW) for the maintenance phase of each contract to be accomplished at the facility/complex.

At the end of the O&M phase, the contractor is required to provide training to successor contractor and/or government personnel on the O&M of the facilities and the facilities' systems/equipment. The contractor is also required to present a training plan for approval. The contractor shall provide the training, printed instruction material, and training aids, in accordance with the approved plan.

The training plan will identify the number of man-hours of instruction required for each system following the guidelines listed in the contract specifications. The training plan will also specify the proportions of the instruction time to be used for onsite classroom instruction and for onsite instruction which will be performed utilizing the installed equipment or systems. All systems and subsystems requiring training of qualified personnel to properly operate and maintain those systems shall be identified. A task and skills analysis shall be documented to identify special skills required to operate and/or maintain critical, complex or specialized systems. After the skill

requirements are approved, the actual training program shall be defined.

Installation personnel must be involved during design, construction and O&M phases and not wait until the training phase. In addition to the contractual training, there are several Corps PROSPECT courses that would be excellent supplements to the contractor training that would provide background information for involvement during each phase. The following courses are recommended:

- Course 340, HVAC Control Systems Design
- Course 246, HVAC Controls System O&M
- Course 382, HVAC Controls System QV
- Course 391, HVAC Design Basic
- Course 068, HVAC System TAB-QV
- Course 327, Mechanical System Commissioning
- Course 074, Mechanical QV.

The courses do not need to be taken in the order listed. The POC at Huntsville Training Center is Janine Wright at (256) 895-7455.

POC is Gary Bauer, (202) 761-1228, e-mail: [gary.g.bauer@usace.army.mil](mailto:gary.g.bauer@usace.army.mil)

Gary G. Bauer is a mechanical engineer in the Engineering and Construction Division of HQ USACE. 

**For an electronic copy  
of the latest *Digest*,  
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and click on  
publications.**



# The charge for distributed generation

by Eileen Westervelt and Steve Siegel

**R**olling blackouts in California, the 9/11 terrorist attacks, wars in the Middle East, and the northeast U.S. electrical blackout all point to distributed electrical generation as an idea whose time has come, and the U.S Army is taking notice. The charge is on for distributed generation (DG) electricity, independent of transmission systems backlogged with maintenance, and more resilient to ill intentioned outages.

The Energy and Security Group (ESG) of Reston, Virginia, is leading the Army Installation Energy Security Plans (AIESP) project sponsored by the Assistant Chief of Staff for Installation Management (ACSIM). The objective is to provide plans to employ DG technologies to produce clean and secure electrical generation for key installation loads. Special features include going beyond a technical prescription to the identification of financing options that can make the technical potential possible. Further, an optimization routine allows for customizing recommendations based on site-specific priorities and laying out tradeoffs for project implementers. Three case studies are being conducted -- at Forts Lewis, Washington, Carson, Colorado, and Riley, Kansas.

A cross-functional team composed of ESG, the Engineer Research Development Center's Construction Engineering Research Laboratory (ERDC-CERL), the University of Illinois at Urbana Champaign (UIUC), the Center for Army Analysis (CAA), CALIBRE, and Sandia National Laboratories (SNL) was recently formed. This team identified key electrical loads on Army installations, the technologies to address those loads, and the financing mechanisms to implement the appropriate alternatives. DG options considered were reciprocating engines, fuel cells, microturbines, wind, solar and biomass technologies.

Energy needs were identified that support the installations' mission to deploy combat-ready troops. Key mission requirements included the areas of deployment (supported by mobilization and training)



*Technologies such as fuel cells and wind turbines could be considered in developing distributed generation plans for installations.*

and combat readiness (undergirded by health, safety and installation/community support). Grouping of loads by function enabled time-sequenced consideration as well as identification of appropriate technological response.

The technology choices also consider the economic life of the technology and how it fits into the final end-state plan for distributed generation at the facility. Energy storage, plus fuel flexibility and source

also figure into the decision matrix. A simplified model for quantifying the electrical loads was developed which accounted for building function, area, and the presence of air-conditioning.

The team identified technically feasible DG options to meet key loads and assessed the energy, financial and environmental impact of potential technologies using a software application named DiGIT (Distributed Generation Integration Tool). Financing options and eligible federal, state and utility incentives were identified.

Implementation plan options that highlight an overall approach, the key technical opportunities, associated tradeoffs, and financing alternatives were prepared for the three FORSCOM installations. The time is ripe, and the method has been provided for taking proactive measures to ensure available power for key Army missions when and where needed.

The project team is available to explore DG options for additional installations or Installation Management Agency Regional Centers.

*POC is Steve Siegel, 703-715-3014, e-mail: SBSIEGEL@aol.com*

*Eileen Westervelt, P.E. is a mechanical engineer at CERL; and Steve Siegel is an economist, the Vice-President of ESG, and the project manager.*



# Residential fuel cells keep Navy powered during blackout

by Dana Finney

When the major power failure hit the Northeast during August, it had no effect on 16 families living in the Quiet Harbor complex at the Naval Support Unit (NSU) in Saratoga Springs, New York. Their housing is equipped with eight proton exchange membrane (PEM) fuel cells, installed as part of the Department of Defense Fuel Cell Demonstration program which is managed by the Engineer Research and Development Center's Construction Engineering Research Laboratory (CERL).

The rest of the base was without power for about 4-1/2 hours, except for those other mission-critical activities with backup energy sources such as generators. The natural gas-fueled PEM fuel cells, which are non-polluting and use byproduct heat for cogeneration, performed as designed during the blackout.

"We set up the fuel cells at this site so that they will disconnect from the main utility in the event of a power failure," said Frank Holcomb, CERL project leader for the DoD demonstrations. "That means the individual quarters had electricity, which is what we intended." If the fuel cells had not disconnected from the grid, they actually would have tried to supply energy to the rest of the base, he said.

PEM fuel cells are targeted for residential use. They have DoD's interest as a clean and efficient source of power generation, and for their potential in distributed generation strategies including those developed for energy security. The systems installed at NSU Saratoga Springs produce 5 kW of electricity each, with two supplying all of the energy needs for a 4-unit family housing suite. The thermal energy produced during the fuel cells' internal reaction process is directed to residents' hot water heaters, and this ability to harness waste heat adds to the systems' overall efficiency.

The NSU - Quiet Harbor complex provides logistic and base operating support, comptroller duties and supply services



*Proton exchange membrane fuel cells at Navy Support Unit, Saratoga Springs, New York.*

(not directly related to training) to the Naval Nuclear Power Training Unit, Ballston Spa, NY. The NSU also provides administrative, morale, welfare and recreation, and personal property and housing services for DoD activities and related personnel.

The Naval Surface Warfare Center at China Lake, CA, funded CERL to install the NSU's fuel cells under the DoD demonstration. Both the Army and the Navy received a funding line item under the program, and the Navy elected to have the Army complete the New York project, in part due to a Broad Agency Announcement that had been implemented for the PEM fuel cells.

According to Holcomb, "This is basically a turnkey package where we lease the fuel cells for a year, with the vendor providing design, installation, and all operation and maintenance, as well as site restoration at the end of the demonstration. We also require at least a 90 percent availability during the year's demonstration, and we collect all of the operating data." The fuel cell stack must be replaced after about one

year of operation, at which point the research program returns them to the manufacturer under the contract terms. Plug Power, Inc., is supplying the PEM units for the demonstration at NSU Saratoga Springs.

The U.S. Army Military Academy at West Point, NY, also has three of the PEM fuel cells. Tenants in the residences with these units selected five circuits in their existing panels for an uninterrupted power supply in the event of a grid failure. These houses also used the fuel cells' waste heat for domestic hot water. Two of three fuel cells operated as they should have during the blackout, with one house having only enough power to operate the refrigerator.

"Two of the homes in the demonstration had air-conditioning, lights, and cold beer during the blackout," said Holcomb. "The third had cold beer, but residents would have had to enjoy it in the dark." Luckily their neighbors also had lights.

Fuel cells represent an emerging technology that may supply critical DoD energy needs in the future. The DoD Fuel Cell Demonstration Program seeks to gain ►



# The Blackout of 2003

They say timing is everything! When the Niagara grid went down at 1605 hours on 14 August, a member of ACSIM's Energy Team was right there in the midst of the massive power outage. By chance, he was in Eastlake, Ohio, a small suburb just to the east of Cleveland. He had just made a purchase at a convenience store right in the shadow of First Energy's generating plant. At that instant, the cash register went dead, the lights, ATMs and water pumping plants and gasoline stations all failed. On top of that, the restaurants ceased operations and all potable water had to be boiled before drinking. It was an energy man's worst nightmare, but fortunately, it had little effect on Army installations. For one thing, the Army had few major installations within the Niagara Grid service boundaries, and it happened after the normal day's working hours.

Nevertheless, the incident did serve as a wake up call, demonstrating the risk inherent in relying on the grid. It also served as a good topic for discussion at the DOD/GSA/DOE workshop for energy managers, which took place the following week in Lake Buena Vista, Florida. The general consensus was that we were lucky this time but could not count on continued good fortune.

Although we happened to have one of our representatives in midst of the black-

out, we still don't know why the grid failed. The answers will come out in the investigations to follow. Whatever the outcome, one basic fact is sure to surface. Given the Army's mission, it is risky to rely entirely on the grid. The country relies on the grid system for 92% of its power requirement and, as recent events have shown, the current grid infrastructure is outdated and unreliable. We must look for solutions and take steps to make the Army at least selectively grid independent.

The first steps in this direction have already been taken. ACSIM has engaged two commercial firms to work with ERDC/CERL to 1) develop an analytic capability to prepare plans for a more secure energy supply through distributed generation (DG) technologies at Army installations for key mission areas, including training, mobilization, deployment, safety and health; and 2) show the tradeoffs of different DG options among the key objectives of security, environmental quality, costs/finance, ease of implementation and appeal to installation personnel.

Energy and Security Group, Inc., teamed with CALIBRE to conduct a four-step approach to enhancing energy security that is being demonstrated in the cases of Forts Lewis, Carson and Riley:

- **Identify Key Mission Areas.** Working with installation personnel, identified key missions in the areas of training,

mobilization and deployment, health and safety.

- **Calculate Technical Engineering Potential.** Assessed the energy needs for key mission areas and determined technically feasible DG options for meeting these requirements.
- **Identify Funding Sources.** Identified public and private sector financing sources, and engaged the utilities currently powering the case installations to ensure they are involved early in the process. Also identified eligible federal, state and utility incentives.
- **Formulate Investment Strategies.** Developed and evaluated DG investment strategies at the three case installations, and identified issues and opportunities that should be addressed for successful onsite DG implementation.

Beyond the three case study installations, the methodology developed is readily transferable to other Army installations and can be applied on a regional or Army-wide basis. With projects such as this, we can better ensure that energy will be available for key Army missions, when and where needed.

POCs are Henry Gignilliat, (703) 428-7003 DSN 328, e-mail: [henry.gignilliat@hqda.army.mil](mailto:henry.gignilliat@hqda.army.mil); and Steve Seigel, Energy Security Group, (703) 715-3014. **PWD**

(continued from previous page)

performance data that can help manufacturers optimize the systems and make them affordable in a shorter timeframe than may otherwise be possible. Another goal is to explore the potential uses that could bring about economies of scale. The current PEM fuel cells cost about \$65,000 each.

For more information about this article or the DoD Fuel Cell Demonstration Program, please contact Frank Holcomb at 217-352-6511, ext. 7412, [f-holcomb@cecer.army.mil](mailto:f-holcomb@cecer.army.mil), or visit the website at <http://www.dodfuelcell.com>. **PWD**

## Call for Articles

The November/December 2003 issue of the *Public Works Digest* will feature the **Annual Report**.

Please e-mail all articles to [alex.k.stakhiv@hq02.usace.army.mil](mailto:alex.k.stakhiv@hq02.usace.army.mil) no later than October 31, 2003.



## Purchasing re-refined oil

The Defense Supply Center in Richmond (DSCR) offers installations two choices for purchasing re-refined oil: the Closed Loop Re-Refined Oil Program and the Basic Re-refined Oil Program. The major difference between them is that the first includes delivery and pick up of used oil and the later does not.

Under the Basic Re-refined Oil Program, customers worldwide can purchase

oil in quarts, 5-gallon containers, and 55-gallon drums, while choosing from a variety of viscosities. There is no minimum order requirement and all unit prices include shipping and handling. However, used oil pick up costs are not included in unit prices, so customers have to pay an additional fee for disposing of used oil.

With the Closed Loop Re-Refined Oil Program, customers in the continental

United States can purchase oil in quarts, 5-gallon containers, 55-gallon drums, or in bulk, and is also available in a variety of viscosities. The Closed Loop option unit prices include product delivery as well as pick up of the used oil, which eliminates time-consuming disposal contracts.

*For more information regarding re-refined oil purchasing, please contact the Defense Supply Center Richmond at (804) 279-4865, or visit their Internet site: [www.dscr.dla.mil](http://www.dscr.dla.mil)* **PWD**

## EnergyPlus wins R&D 100 Award

by Dana Finney and Linda Lawrie

What do ATMs, halogen lights, and anti-smoking patches have in common? All received R&D Magazine's prestigious R&D 100 Award at one time. This year the EnergyPlus building energy simulation program has won the award in the 41st annual competition to honor the 100 most technologically significant new products of the year.

EnergyPlus is a new computer program that models expected energy use in commercial and residential buildings at the design phase. Energy use in buildings accounts for a third of the nation's total energy use and two-thirds of its electricity use. A predecessor of EnergyPlus, called DOE-2, has already saved an estimated \$20 billion in energy costs since 1980. Over the next decade, EnergyPlus is expected to exceed those savings.

EnergyPlus evolved from earlier systems developed at ERDC's Construction Engineering Research Laboratory (CERL) and the Department of Energy (DoE). Features from CERL's program, called Building Loads Analysis and System Thermodynamics (BLAST) and DoE's program, DOE-2, were combined into the "Best of" features for EnergyPlus. BLAST originally was developed to address Department of Defense facilities' unique heating, ventilation and air-conditioning requirements in both new construction and retrofits.

CERL participated on the team to develop EnergyPlus, along with representatives from Berkeley Lab's Environmental Energy Technologies Division; the University of Illinois at Urbana-Champaign; the DoE's Office of Energy Efficiency and

Renewable Energy; Florida Solar Energy Center; Oklahoma State University; Pennsylvania State University; the University of Wisconsin; and GARD Analytics, Inc.

More than 12,000 users have downloaded the free software since it was released. In addition, over 50 licenses have been issued to collaborative developers along with eight commercial licenses.

The R&D 100 Award will be presented to the EnergyPlus team during October in Chicago.

*For more information, contact Tom Hartranft, (217) 373-6713, e-mail: [t-hartranft@cecer.army.mil](mailto:t-hartranft@cecer.army.mil) or go to: [www.eere.energy.gov/buildings/energyplus/](http://www.eere.energy.gov/buildings/energyplus/)*

*Dana Finney is the public affairs officer at ERDC-CERL; Linda Lawrie recently retired from CERL's Energy Branch.* **PWD**

## Lawrie retires from ERDC

Linda K. Lawrie retired September 30, 2003, after a 30+ year career with the U.S. Army Corps of Engineers Construction Engineering Research Laboratory (CERL). Lawrie is well known in the DPW energy managers' arena through her work at CERL and on numerous installations. She has fostered several important software systems targeted for Army designers, which also find use in world-wide applications. She helped develop and provided techni-

cal leadership for the Life-Cycle Cost in Design (LCCID), Building Loads Analysis and Systems Thermodynamics (BLAST), and EnergyPlus programs. In addition to working with software systems, she has served as a trainer in the PROSPECT program for several courses and has performed other energy-related work for Corps designers.

LCCID is used by all of the Services to perform life-cycle cost studies in design and energy/water conservation projects.



Linda K. Lawrie

BLAST and EnergyPlus allow designers to analyze buildings for energy consumption and efficiency

as well as occupant comfort and other important aspects for building owners and developers. **PWD**



# Army programs target oil

by Eleanore Hajian

The Army has found a trustworthy ally in its mission to seek out more environmentally friendly products that conserve resources and help reduce hazardous waste.

That ally is re-refined motor oil.

Re-refined motor oil is used oil that has undergone a process to remove contaminants, replace additives and restore it to a virgin oil quality. Its wide acceptance as a reliable, less expensive, more environmentally friendly alternative to virgin oil has made it a staple in many Army auto shops.

According to sales figures for fiscal year 2002 from the Defense Supply Center

Richmond (DSCR), the sole-source supplier of re-refined oil in the military supply system, the Army purchased nearly \$369,000 worth of re-refined oil for its commercial vehicles, compared to \$576.11 worth of virgin oil.

Although the use of re-refined oil products in tactical vehicles has not caught on as quickly, sales continue to grow. In the last fiscal year, Army purchases of re-refined military specification oil from DSCR reached \$1.45 million – close to 38 percent of all motor oil purchased by the Army for tactical vehicles from DSCR within the same time frame.

With several re-refined oil products now carrying a seal of approval for use in military tactical vehicles from the Army's Tank Automotive and Armaments Command, the use of re-refined oil in tactical vehicles will likely continue to grow.

Re-refining oil has many advantages that help meet the Army's affirmative procurement goals. It helps reduce the need for oil imports, conserves energy and reduces used motor oil disposal.

*Erin Jarman and Dawn Basset, consultants with Booz Allen Hamilton providing support to the Pollution Prevention branch of the U.S. Army Environmental Center, contributed to this article. Eleanore Hajian is a Booz Allen Hamilton consultant supporting the USAEC Public Affairs Office.* **PWD**

## An added benefit

Another option available to Army installations that can help conserve oil resources and reduce costs is the Army Oil Analysis Program (AOAP).

The AOAP is part of a DOD-wide initiative that uses periodic laboratory evaluation of used oil samples to determine impending component failures and

lubricant condition. Early detection of problems allows maintenance to be performed before more severe damage to mechanical components occurs.

An added benefit is that the program also uses oil analysis to determine the need for an oil change. Installations using the AOAP base the need for oil changes on the condition of oil samples, as opposed to fol-

lowing a pre-set oil-changing schedule. This reduces the frequency of oil changes.

*For more information about the AOAP, contact the Army Materiel Command Logistics Support Activity at (256) 955-0869 or <http://weblog.logsa.army.mil/aoap/openpg.htm>*

**PWD**

## CERL named in national energy award

Champaign, Ill.

The U.S. Department of Energy (DOE) presented its Showcase Award to the Construction Engineering Research Laboratory (CERL), which led a project at Watervliet Arsenal, New York, to demonstrate new fuel cell technology. Award winners are selected by DOE's Federal Energy Management Program (FEMP) in an effort to recognize individuals, groups, and agencies for their outstanding contributions to saving energy at Federal facilities. Contributions are in the areas of energy efficiency, water conservation, and the use of advanced and renewable energy technologies.

At the Army's Watervliet facility, CERL researcher Frank Holcomb, Champaign,



Frank Holcomb

directed a team that installed 10 5-kilowatt proton exchange membrane (PEM) fuel

cells, an emerging system for powering residences. Over one year of operating these units, the arsenal saved some \$6,000 and greatly reduced pollutant emissions by using the fuel cell's site-generated clean power instead of purchasing from the local utility.

The showcase awards are intended to promote success stories so that other facility managers can take advantage of energy-saving opportunities. CERL manages the Department of Defense Fuel Cells Program, which seeks to push fuel cells into the commercial market more quickly through demonstration and evaluation of different systems. PlugPower, Inc., supplied the PEM fuel cells used at Watervliet. **PWD**



# A new name for the Army's Environmental Assessment Program

by Susan Drgos

In case you have not heard, the Army Environmental Compliance Assessment (ECAS) Program has officially changed its name to Environmental Performance Assessment System (EPAS).

ECAS was implemented in 1992 to support the compliance pillar of the Army's Environmental Strategy. The purpose of the ECAS program was to assist the Army in achieving, maintaining, and monitoring compliance with federal, state, as well as local environmental regulations. The program achieved this by conducting periodic ECAS assessments to identify installation compliance deficiencies, recommend corrective actions, and identify resources

needed for corrective actions.

The ECAS program has since evolved into the EPAS program, and the name change was formally adopted October 1, 2002.

Although regulatory compliance is still one of the underlying goals of the EPAS program, the new program places additional focus on effective environmental management systems, programs, and practices. The EPAS program is designed to advance the transformation of the Army beyond current regulatory compliance, and toward effective environmental management systems that strive for long-term sustainability and continuing mission effectiveness.

EPAS will help the Army eliminate fines and regulatory actions, build highly effective, cost efficient environmental management programs, achieve and maintain regulatory compliance, and aid in the long-term containment of Army installations and missions. The new program format is expected to evolve over the next few years, and by the end of fiscal 2006, a special cell of ISO 14001 certified auditors will be available to provide third party certification to installations desiring such certification for their EMS programs.

*Susan Drgos is a Booz Allen Hamilton consultant supporting USAEC.* **PWD**

## Army EPAS Program to review EMS during FY 04

Chemical Material Agency

United States Army Environmental Performance Assessment System (EPAS) assessors will review environmental management systems (EMS) of seven U.S. Army installation tenant activities in fiscal 2004.

This review is in addition to the 25 installation EPAS compliance assessments projected for fiscal 2004. Including EMS reviews as part of an EPAS assessment is a result of the shift from the U.S. Army Environmental Compliance Assessment System (ECAS) to the Army EPAS in October 2002. This change not only affects the name, but also reflects a broadened perspective that evaluates an installation's environmental performance as a whole, as opposed to strictly evaluating an installation's regulatory compliance.

The ECAS system originated in 1991 in response to an Environmental Protection Agency (EPA) recommendation that the Army perform self-auditing for compliance issues, according to Matt Andrews, Army EPAS Team Leader.

The creators of ECAS sensed a connection between EMS and ECAS in 1996,

when the Army performed an assessment that indicated repeat findings. On review, the ECAS team found that implementing ISO 14001 could help solve many problems, since the solutions would line up nicely with the elements of ISO 14001. ECAS creators then integrated ISO 14001 into the Program Management section of the ECAS protocol. The Army EPAS assessment team is currently developing a separate, detailed EMS report.

For fiscal 2004, the EMS portion of the EPAS assessment will focus on the installation organizations that have implemented an EMS, be it the garrison or a tenant, according to Andrews. EMS implementation will be completed at most Army installations by 2009, and they will be evaluated for EMS as part of EPAS at that time. The logistics of EPAS EMS assessments of garrison or tenant activities is currently being evaluated at the Headquarters, Installation Management Agency (IMA). Army installations are currently in the EMS development and implementation stage, and have taken a first step of a 6-point requirement for EMS, which is not quite as rigorous as

the ISO 14001 model.

If an organization's EMS is robust, it may be exempt from compliance auditing.

Theoretically, if the management is in place, then the performance in the field should be in place (with exceptions). Andrews said the positive changes that could result from the EPAS EMS assessments include:

- Decreased costs.
- Increased efficiency.
- Elimination of repeat findings : simultaneous working of multiple problems.
- Identification of root causes to problems.

As installations become more involved in internal auditing and identifying and correcting compliance deficiencies, the EPAS program will begin to assume a guidance/support role in identifying and providing assistance with environmental program management issues.

*For more information, please visit <http://aec.army.mil/usaec/compliance/ecas00.html>.*

**PWD**



# Army adopts Water Conservation 10 Best Management Practices

by David Williams

To meet the energy reduction and sustainability goals set forth by Executive Order (EO) 13123, the Army has embarked upon several energy and water conservation programs. Whether using Energy Savings Performance Contracts (ESPC), Utility Energy Services Contracts (UESC), or various other energy conservation measures, the Army is committed to reducing its utility and energy usage.

Take, for instance, water conservation. EO 13123 mandated the establishment of water conservation goals for all federal agencies and tasked the Department of Energy (DOE) to take the lead in this effort, with input from the Military Services and Federal Agencies. On 31 July 2000, DOE released guidance to establish Water Efficiency Improvement Goals for Federal Agencies. These goals are based on what DOE terms Water Efficiency Improvement 10 Best Management Practices (BMP).

The Assistant Chief of Staff for Installation Management (ACSIM), in his memo dated 18 March 2003, mandated that the Army adopt the DOE's 10 Best Management Practices (BMPs) as benchmarks for developing installation water management plans, increasing public awareness, and implementing conservation practices.

The Army's goal is to have all installations incorporate water management plans into their installation utility management plans by 1 October 2004 and have the following percentage of installations implement a minimum of 4 of the 10 DOE BMPs by the following dates:

31 December 2004 – 15% of bases shall implement at least 4 BMPs

31 December 2006 – 40% of bases shall implement at least 4 BMPs

31 December 2008 – 75% of bases shall implement at least 4 BMPs

31 December 2010 – 100% of bases shall implement at least 4 BMPs

## The 10 Best Management Practices are listed below:

### 1. *Public Information and Education Programs*

Education is key when implementing new technologies. If we install and use new technology, it is essential that we clearly define what the new technologies are and demonstrate to the users the proper way to use them. Publicizing the use of such conservation measures enhances public awareness and shows our commitment to saving our natural resources.

### 2. *Distribution System Audits, Leak Detection and Repair*

Performing periodic evaluations and analysis of your systems and instituting a leak detection and repair program can help reduce water losses and protect against property damage.

### 3. *Water Efficient Landscape*

Most areas landscapes require additional water to make up for the difference in natural rainfall and precipitation. Installing an irrigation meter would measure the amount of additional water being used on the landscape and would help conserve usage.

### 4. *Toilets and Urinals*

Federal law requires that residential toilets manufactured after 1 January 1994 use no more than 1.6 gallons per flush (gpf) and commercial toilets manufactured after 1 January 1997 use no more than 1.6 gpf and urinals no more than 1 gpf. The use of low flush valves, waterless (no flush) urinals, and other alternative technologies can greatly reduce water consumption.

### 5. *Faucets and Showerheads*

Federal guidelines mandate that all lavatory and kitchen faucets and aerators manufactured after 1 Jan 1994 use no more than 2.2 gallons per minute (gpm) and showerheads must use no more than 2.5 gpm. Changing your faucets and showerheads to meet federal guidelines would save water consumption and money.

### 6. *Boiler/Steam Systems*

Performing preventive and routine maintenance on boilers and steam systems would greatly increase operating efficiency. Proper operation of steam traps and steam lines could be ensured through periodic checks and could reduce water consumption and improve boiler efficiency.

### 7. *Single-Pass Cooling Systems*

These systems use 40 times more water than a cooling cycle operated at 5 cycles of concentration. If economical, replace single-pass cooling systems with multi-pass cooling or closed-looped systems. Other options are to look for other uses for the effluent.

### 8. *Cooling Tower Systems*

These systems help regulate temperature by rejecting heat from air conditioning systems or by cooling hot equipment. To do this, these systems use large amounts of water. One way to reduce water consumption is to recycle the effluent from a single-pass system and use it in the cooling tower.

### 9. *Miscellaneous High Water-Using Processes*

Such areas as kitchens, laundry/cleaning services, labs, etc. are high water-using processes. Using different methods such as metering or retrofitting equipment with more energy efficient will go a long way toward conserving water.

### 10. *Water Reuse and Recycling*

By identifying areas that can use non-potable water, installations can take advantage of using filtered but otherwise untreated water. Treated wastewater can be redistributed for non-potable uses.

To learn more about the 10 BMPs, please visit the DOE website at: <http://www.eere.energy.gov/femp/resources/waterguide.html>

POC is David Williams, (703) 428-6175 DSN 328, e-mail: David.Williams2@hqda.army.mil

David Williams works in the Facilities Policy Division of OASIM. **PWD**



# Picatinny Arsenal privatizes its electrical distribution system

by Thomas E. Struble

The Picatinny Arsenal electrical distribution system was sold to Sussex Rural Electric Cooperative of Sussex, New Jersey, under a privatization study that was conducted through the Defense Energy Support Center. The privatization study was undertaken in order to comply with Department of Defense Reform Initiative Directive #49, which required that privatization studies of utilities and utility systems be conducted at all installations, both in the United States and overseas, that have utility systems available to convey.

Established in 1937, Sussex Rural Electric Cooperative, a not-for-profit business entity and the only rural electric cooperative in the state of New Jersey, currently serves over 10,000 members in northern New Jersey and some areas of Orange County, New York.

Commensurate with the sale of the Picatinny Arsenal electrical distribution system was the establishment of a utility service contract with the cooperative. Under the terms of the contract, the cooperative operates and maintains the system and implements a planned program of renewals and replacements of system equipment. In addition, the cooperative has begun implementation of the following program of initial capital upgrades to increase system reliability and safety:

- Equipment maintenance and renewals and replacements will be facilitated by the creation of a reliable inventory database through the systematic mapping of all equipment by a state-of-the-art Global Positioning System.
- Operation of circuit breakers in both substations will be enhanced to recognize predetermined conditions or electrical failures in the system by the repair of relays and circuit breakers in the substations.
- Voltage fluctuations on the system will decrease and the chances for damage from lightning strikes will lessen by the tie-in of circuit neutrals to the ground at

the substation.

- Service interruption areas will be minimized due to the sectionalizing study of the system to determine load characteristics, fault current and breaker and fuse sizes and their locations.
- The safety of vehicular and pedestrian traffic will be enhanced by the installation of guy guards on utility poles.
- Energy losses will be controlled, voltages will be stabilized, and the system will operate more efficiently through the installation of two 1800-kVar banks and two 1200-kVar banks.
- System operation and safety will be enhanced by the identification and labeling of all control devices on the system.
- System component problems will be identified and addressed before causing system faults through use of a comprehensive infrared testing program.
- Monitoring and control of the substations will be greatly enhanced by the installation of two Remote Transmitting Units (RTUs) in the substations for tie-in into SREC's Supervisory Control and Data Acquisition system. The RTUs will also reduce emergency response times.
- Responses to power outages and voltage problems will be further enhanced by the installation of 10 Telemetric MicroRTUs throughout the system to monitor and communicate power outages, faults, and over- and under-voltage events.
- A more uniform voltage profile will exist at the substations through the installation of six 200A regulators in substation #1 and six 100A regulators in substation #2.
- The ability to switch circuits without service interruptions will be enhanced through the relocation of three-phase gang switches on the system.
- The ability to limit and isolate fault locations to a small area and to minimize outages to larger areas, as well as the safety of electrical equipment and the public-at-

large after equipment failures, will be enhanced after the installation of three-phase electronic reclosers.

Due to the cooperative's strong project implementation plan, the transition from a government-owned and -operated system to a privately-owned and -operated system was transparent to arsenal employees and residents.

This seamless transition can largely be attributed to the fact that the cooperative hired all 3 displaced government linemen, which enabled the cooperative to better familiarize themselves with the particular operating characteristics of the system, as well as with existing system maintenance procedures.

The cooperative has provided a highly skilled workforce, along with state-of-the-art technology and tools, to operate and maintain the system. The cooperative has demonstrated great scheduling flexibility in order to minimize adverse impacts to Picatinny mission activities.

One area of concern to Picatinny was the ability of the cooperative to respond to emergency outages, being that the cooperative's headquarters is located approximately 30 miles from Picatinny. However, the cooperative's response to the one outage that did occur since the system was privatized was well within their proposed 120-minute response time, which is an industry standard.

The cooperative has a telephone hotline available on a 24 hour per day/7 day per week basis to enable service interruptions to be reported, and responded to, in an expeditious manner. In addition, the cooperative's notification and response procedures will be further strengthened by the automated outage detection system the cooperative plans to install under an initial capital upgrade.

The cooperative has additional resources available, if necessary, to augment their own responses to severe power interruptions through comprehensive mutual



# SCE to manage electric distribution system at Fort Irwin

by Rene Quinones

Southern California Edison (SCE). SCE's officers recently gathered for an afternoon meeting and post tour with the commanding general of Fort Irwin and leadership personnel from the base to celebrate the Fort Irwin-SCE electric distribution system privatization agreement. The contract, which was signed on March 31, will turn the facility's system over to SCE for operation and ownership on August 1, 2003.

SCE's Director of Government and Institution Accounts Gary Green, who led the negotiations, said the utility's agreement with Fort Irwin resulted from a Federal mandate to review the possibility of privatizing all utility systems at military installations in the United States in order to reduce cost and better utilize military resources for mission functions.

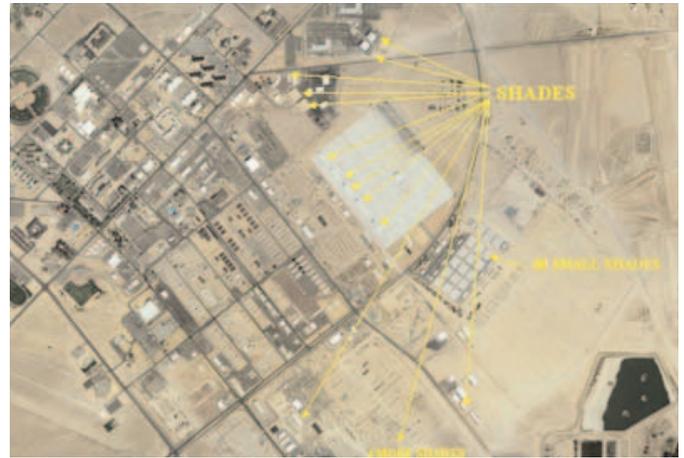
"Fort Irwin and SCE agreed that there were financial and operational benefits to the Army to privatize," Green said. "Integrating the system into the broader SCE system will allow the Army to focus its efforts on its mission of training military personnel. It will also bring strong service, reliability and the commitment of every SCE employee."

John King, account manager for Fort Irwin, said the project is a huge cross-com-

pany effort to provide fully integrated energy service to the nation's largest Army training facility.

"Fort Irwin is roughly the size of Rhode Island," King said. "It's one of our largest customers, with 5,000 military personnel and their families living on base and another 3,000 people in the civilian workforce. Virtually every soldier who was deployed to Iraq went through desert warfare training at Fort Irwin, and the facility is expanding to include industrial and urban warfare training as well."

King said that SCE will embark on major system improvements at Fort Irwin over the next several years, which will result in a highly reliable electric system. "From the residence quarters to the most technologically advanced equipment in the range areas, SCE is committed to bringing improvements to the system that will result in fewer outages and focused, quick responses when there is a problem with the system," he said.



Locations of shades for photovoltaic solar panels at Fort Irwin, California.

"This is just the beginning of a national trend," said Bill Bryan, division Vice President for Major Customer Accounts. "Several small military installations in other states have already been privatized, and SCE is looking into similar projects with Edwards Air Force Base, the Marine installation at 29 Palms, China Lake and Naval Base-Ventura County. It's good for our company, and it allows the military to do what it's best at doing."

For more information, please contact John Adair of SCE at (626) 633-7141.

Rene Quinones is the installation planner/energy manager at Fort Irwin, CA. **PWD**

(continued from previous page)

aid agreements they maintain with 15 Pennsylvania cooperatives and nearly 1,000 nationwide cooperatives.

During the last 10 years, Picatinny has been the beneficiary of outstanding services that have been provided by other not-for-profit business entities under the arsenal's Javits-Wagner-O'Day contracting program. "Our experience to date with Sussex Rural Electric Cooperative has given us every indication that the cooperative will meet the high standards that have been set by the other not-for-profit businesses," said Richard Havrisko,

Director of Utilities. "The cooperative has provided strong managerial oversight and effective liaison with government representatives through the efforts of William Smith, President and CEO, Jim Siglin, Project Manager, and Tom Brown, Chief Lineman. The quality management plan that has been implemented by the cooperative effectively monitors all aspects of contract performance, to include responsiveness, flexibility and efficiency," added Havrisko. "We are also greatly impressed with the quality and skills of the linemen who operate and maintain the system on a day-to-day basis."

Picatinny fully expects that the coopera-

tive's managerial practices, performance metrics and maintenance program will result in a significant upgrade to the condition of arsenal's electrical distribution system, thereby enhancing mission activities on the installation.

POC is Thomas Struble, (973) 724-7926 DSN 880, e-mail: tstruble@pica.army.mil

Thomas Struble is a Program Support Specialist at Picatinny Arsenal's Garrison Utilities/Privatization Office responsible for preparing and administering various infrastructure support contracts, to include utility privatization studies. **PWD**



# Energy study in Alaska takes regional approach

by John L. Vavrin

A joint, long-range energy assessment will produce strategies to address future power requirements throughout the Greater Fairbanks, AK, Military Complex. The study, led by USACE's Engineer Research and Development Center (ERDC), is being done in coordination with the Assistant Chief of Staff for Installation Management (ACSIM) and a military joint review panel representing 12 different agencies within the Army, Air Force, and Missile Defense Agency.

The Army has several old coal-fired heat and power plants in the Fairbanks area that are failing and require extensive repair and renovation. Further, these on-post energy facilities will not provide sufficient capacity to meet emerging force structure and military family housing requirements. Rather than pursuing independent heat and power solutions for each base, ACSIM has asked USACE's Construction Engineering Research Laboratory (CERL) to assess all potential technologies and solutions which are environmentally friendly, efficient, safe, economically sound, and reliable, and that could serve the needs of the military and, if practical, local civilian communities.

"This is a joint study involving the Army, Air Force, and Missile Defense

Agency [MDA] where we're trying to look at energy needs on a regional basis and figure out what technologies and partnerships would make sense," said Hank Gignilliat,



Fort Wainwright central heating plant – one of the aging facilities to be assessed in the regional study.

energy program manager at ACSIM's Facilities and Housing Directorate.

The installations included in this regional analysis include Fort Greely, Fort Wainwright, and Eielson Air Force Base. The study at Greely will consider separate systems for the DoD tenant (MDA) and the Army Garrison.

CERL is evaluating new technologies, plant and distribution system privatization, renovation of existing facilities, construction of new, energy efficient plants, and the purchase of electricity and/or heat from a utility company. Recommendations will consider environmental goals of improving

air and water quality, water conservation, solid waste reduction, and resource/energy savings.

Each recommendation will be evaluated based on the following criteria:

- Capital cost
- Life-cycle costs
- 25-year budgeting and staffing estimates
- Implementation schedule (time-line)
- Impact on each installation's mission requirements
- Security
- Reliability
- Environmental impacts
- Flexibility to meet future requirements

On-site fieldwork in the region is underway. The project will include a two-day strategic energy forum, during the on-site work, where regional and national subject matter experts will recommend solutions to the study's goals. Recommendations will be presented to senior DoD leadership during spring 2004.

POC is John L. Vavrin, 1-800-872-2375 (ext. 7570), john.vavrin@erdc.usace.army.mil.

John L. Vavrin is a principal investigator in ERDC-CERL's Energy Branch. **PWD**

## Setback thermostats in barracks

Fort Irwin has accepted a 312-person, 1 + 1 barracks complex that includes a thermostat setback system in each sleeping room.

The National Training Center (NTC) located at Fort Irwin is home to 10 large-scale exercises a year-- referred to as rotations. This system requires units assigned to the NTC to spend several weeks in the field per rotation, during which time, air conditioning units would be left running at the last setting.

A system was installed in each of the

new rooms that will go into setback mode, 88 degrees cooling or 55 degrees heating, every 24 hours unless the occupant validates his/her presence in the room. Validation means simply pushing a button on the thermostat to activate a countdown clock. When the clock hits zero, the system goes into setback. This new setback system will ensure energy savings during periods when the soldier is in the field or on leave.

For more information, please contact Rene Quinones, Fort Irwin Energy Manager, (760) 380-5048 DSN 470, e-mail: rene.quinones@irwin.army.mil **PWD**





# Electro-osmotic pulse to control mold growth at Fort Sill

by Dana Finney and Vanessa Moll

**A** proven technology for drying up wet basements also looks promising for mold abatement. Electro-Osmotic Pulse (EOP) systems may stop mold growth by denying this organism the moisture it needs to sustain life.

EOP has been installed in numerous Army facilities, where it is successfully preventing moisture intrusion in basements and other below-grade structures. Research at the U.S. Army Engineer Research and Development Center (ERDC) has optimized the system for this use. Because it can control humidity in walls, EOP is now being demonstrated at Fort Sill, OK, as a means to mitigate mold.

“The medical community generally accepts that mold cannot grow where the relative humidity is below 55 percent,” said Vincent Hock, Researcher at ERDC’s Construction Engineering Research Laboratory (CERL). “We have achieved that level in several of our EOP installations.”

The danger of mold in buildings occupied by humans has only recently gained national attention through some well publicized crises. The most common health effect from mold growing in buildings is allergic reaction, but a host of other illnesses is possible, including mucous membrane irritation, infections, and toxicity.

MAJ Michael Jelen, engineer in the Directorate of Engineering at the National Defense University in Washington, DC, was so affected by the mold and humidity in his workplace that, “On hot days I had to leave because of so many allergic reactions...it became a mold factory,” he said.

Tom Critchfield, Chief, Engineering Plans and Services Division in the DPW at Fort Myer, VA, suggested that Jelen install EOP. The building with the mold problem is 170 years old and the brick walls in the basement act like “giant sponges,” causing water to wick up from the ground through the concrete foundation. “EOP seems to be a way to stop it,” said Jelen. I’m sure that conventional water-proofing techniques

wouldn’t fix the problem.” While the EOP unit is still being installed, he added, “I am optimistic about it.”

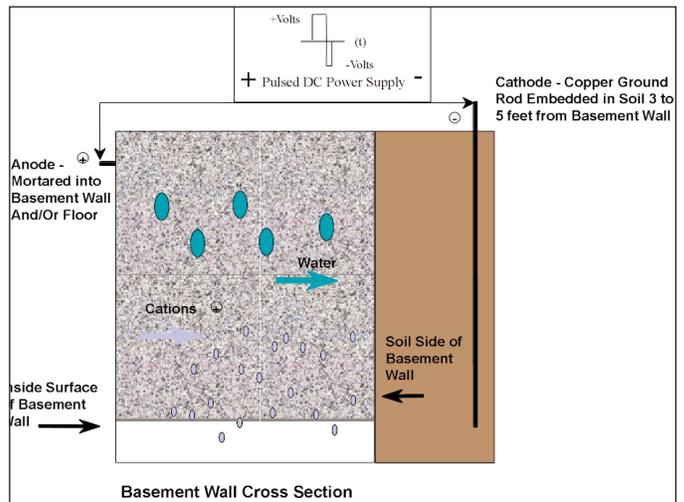
EOP works by embedding anodes into concrete or masonry walls, installing a copper ground rod through the building into the soil, and setting up a series of controlled electrical pulses, inducing electro-osmosis. In this process, cations travel toward the negative electrode in the earth against the normal flow of water molecules. When the walls reach a relative humidity which is so low that electric current can no longer pass through the concrete, the electric pulses cease. As water starts to flow back toward the interior, the humidity level increases to the point that the system turns on again.

CERL will assess EOP specifically for inhibiting mold in the Fort Sill demonstration. In 1996 the technology had been installed in three on-post family housing units that had seepage problems. According to Bryan Price, Assistant Chief of Housing at Fort Sill, since EOP was installed in those housing units “the air quality of basements has improved, and it has helped with mold problems.”

For the mold study, CERL will install EOP in the basements of several housing units and collect data from selected ones over a period of 2 years. The economics will also be documented. Conventional mold mitigation techniques can have astro-



Mold and mildew growth inside buildings can make you sick – literally.



Electro-Osmotic Pulse technology uses electric current to drive moisture out of concrete and masonry walls, creating a non-viable environment for mold.

nomical costs. EOP may represent a lower cost alternative to these methods.

For more information about EOP, please contact Vincent Hock or Orange Marshall at CERL, (217) 373-6753 or -6766, e-mail: v-hock@cecer.army.mil or o-marshall@cecer.army.mil.

Dana Finney is the public affairs officer at ERDC-CERL. Vanessa Moll worked at ERDC-CERL during summer 2003 under the Student Temporary Employment Program; she is now a freshman at Georgetown University. **PWD**



# Problems at Fort Pickapost—a Joe Sparks adventure

by Ron Mundt

Joe Sparks slowly rolled out of his red pick-up truck to start his second week at Fort Pickapost. Tuesday mornings were going to be especially difficult for Joe since Monday nights were taken up with refresher electronic courses down at the local community college.

Even though Joe was the new installation electrical engineer, he could see that his educational background needed improving. Joe had obtained his electrical engineering training about twenty years ago (during the Neanderthal period by current electronic standards) during the transition period between vacuum tubes and transistors. For that reason, he did not always feel comfortable when confronted with electronic problems, but he was trying to rectify that.

As Joe walked into his office, John B.T. Punch, the boiler plant foreman, started to talk about a problem. One of his 50 hp, three (3) phase, 460 volt motor driven feed pumps (pump #1) was over heating so much that John had removed it from the

line and was using the alternate pump. Punch did not know if the problem was with the motor or the pump, and he wanted Joe to take a look and give him his opinion.

Joe felt a little unsure as he started to check out the pump motor. This motor was driven by a variable speed drive that was installed several years ago, and as usual, it was a low bid item and not necessarily one of the better drives. Also, he was not as knowledgeable about "drives" as he wanted to be.

Joe started pump #1, and as John had said, it was running very hot. Unequal load voltages and current quickly indicated that the problem was on the motor side. Unequal motor voltages can cause negative sequence currents and develop opposite motor torque. This in turn can develop heat to the motor and very quickly cause motor winding insulation to fail.

Joe's first thought was that there was a shorted motor winding, but checking the winding resistance indicated that the problem was not with the motor. This now pointed him in the direction of the "drive."

Joe really did not know where to start, however. He asked himself the question, "What could fail inside the drive that would develop unequal voltages?" The only spare parts that were readily available for the "drive" were silicon-controlled rectifiers (SCRs) and diodes, so that was a good place to start. (SCRs are a common replacement part).

After checking the power inverter circuits, Joe found a faulty SCR and diode. The components were replaced and the motor pump heating problem went away. Later, back at the office, when told of what had solved the overheating problem, Punch was very surprised to hear that the problem was not anywhere near where the symptoms were occurring. "That is frequently the case with electrical problems," replied Joe.

*POC is Ron Mundt, (703) 704-2763, e-mail: Ronald.k.mundt@smo01.usace.army.mil*

*Ron Mundt is an electrical engineer in the Special Missions Office of the Military Programs Directorate.* **PWD**

# Fort Bragg fielding test of new off-grid lights

by Lynda Pfau

Next time you drive through Longstreet access point at Fort Bragg, North Carolina, look up (but only momentarily — remember, safety first) and take note of the strange looking streetlights. Although it may more resemble a space-age mixer, you are looking at a new hybrid streetlight, powered not by electricity, but by solar and wind power.

"The hybrid streetlights do look a little different," said KrisTina Wilson, Pollution Prevention Program Manager. "But they offer us much more flexibility when it comes to lighting remote areas."

Maintenance-free batteries are recharged by both solar power and wind generator, allowing the lights to be charged both day and night. Requiring no electricity, the hybrids can be mounted virtually



*Installation complete, testing will begin on the new hybrid lights.*

anywhere.

Currently both the yellow light and white light versions are being tested.

"Not only would moonlights save ener-

gy, they would reduce the costs associated with standard electrical streetlights and cut maintenance costs as well," said Wilson. "The manufacturer claims the batteries for the hybrid lights only need to be changed every three to five years, and the L-E-Ds, like the ones in the new traffic signals, every 15-20 years."

*For more information on the Fort Bragg Pollution Prevention Program, please contact KrisTina Wilson at (910) 396-3341, ext. 266.*

*Lynda S. Pfau is the Environmental Resource Coordinator for Fort Bragg, North Carolina.* **PWD**



# Energy audits reveal conservation measures at Forts Leonard Wood and Carson

by Dana Finney and Dr. Mike Lin

An assessment of process energy use and emissions at two installations produced a list of remedial options that, if implemented, could save some \$4 million with a one-year or less payback. Called "Process Optimization Assessments" (POAs), the audits seek ways for federal facilities to comply with national mandates to conserve energy, use renewables, and include waste prevention and recycling in daily practice.

Two POAs conducted last spring involved a partnership with energy managers at Forts Leonard Wood, Missouri, and Carson, Colorado; the U.S. Army Engineer Research and Development Center's Construction

Engineering Research Laboratory (CERL); and Energy Technology Services International, Inc.

"With everything that's going on day to day, it's hard for me to find energy-saving opportunities on my own," said Scott Clark, Fort Carson's Energy Program Manager, who wears a second hat as Pollution Prevention Manager.

Two levels of POAs are possible. In a Level I POA, which was used at Forts Carson and Wood, the study team relies on installation energy managers' first-hand knowledge of existing problems and brainstormed possible solutions and process improvements. The audit focuses on site-specific issues for which solutions would have the greatest possible economic impact. Major targets are capacity usage, materials, labor, energy consumption, and waste management. Many recommendations that result from this level of assessment are low-cost, no-risk fixes that can be completed quickly.

A Level II study is a follow-on to the Level I POA and is considerably more

involved, often requiring additional outside expertise. However, this in-depth audit produces the greatest number of Energy Conservation Measures (ECMs). Proactive use of these assessments in industry has shown that process energy demand can be reduced by up to 70%.

CERL's Level I assessments at Forts Wood and Carson consisted of: (1) conducting a half-day meeting with on-post staff to introduce the POA approach and to



Fort Carson Maintenance Complex -- Building 8000

develop one-line balances for base utilities (i.e., where the incoming energy is used); (2) identifying opportunities in selected processes to improve performance, increase efficiency, and reduce energy and emissions; and (3) developing potential cost savings and an approximate capital investment for the identified ECMs.

The audits revealed dozens of ECMs at both installations. In addition to the potential energy savings, other economic benefits would accrue from these measures, including reduced pollution, less waste, and improved product quality.

At Fort Leonard Wood, the POA included the three central heating plants, the laundry operation and the Directorate of Logistics (DOL) maintenance complex with a specific focus on painting/media blasting and the wheeled and tracked vehicle shop. A total of 28 ECMs were quantified that, if implemented, will reduce the post's annual energy and operating costs by almost \$2M. The capital investment required to accomplish these savings is about \$2M, resulting in an average simple

payback of 1 year.

At Fort Carson, CERL evaluated the central heating plant and the heating system, painting/media blasting, and component rebuild in the DOL maintenance complex. Twenty-nine ECMs were found, which would result in annual savings of some \$2M if completed. The capital investment required is \$1.25M, producing a 0.6 year simple payback. In addition, Fort Carson received a \$16K refund from its

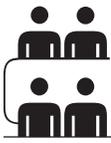
utility company because the team found a false 2.7-MW electric usage peak in the load profile caused by load switching at one of the base substations, which had resulted in an overcharge to the base.

"I took their findings and put together a funding request for \$1.5 million from the Energy Conservation Investment Program, then turned it over to the DPW to finalize the DD Form 1391," said Clark. "I was able to just cut and paste a lot of the information for the draft DD Form 1391 using the draft technical report for the audit."

The technical report provides detailed results for the two assessments. Other reports provide information on audits completed at Pine Bluff and Watervliet Arsenals and Anniston and Tobyhanna Army Depots.

For more information, please contact John Vavrin or Dr. Mike Lin at CERL, 1-800-872-2375 (ext. 7570 or 7358); email [j-vavrin@cecer.army.mil](mailto:j-vavrin@cecer.army.mil) or [m-lin@cecer.army.mil](mailto:m-lin@cecer.army.mil). Visit the CERL homepage at <http://www.cecer.army.mil>.

Dana Finney is the public affairs officer for ERDC-CERL; and Dr. Mike Lin is a principal investigator in CERL's Energy Branch. **PWD**



## Energy 2003: real world/real solutions

by David Williams

The Sixth Annual Energy Workshop and Exposition, sponsored by the Department of Energy (DoE) Federal Energy Management Program and co-sponsored by the U.S. Department of Defense (DoD), was held in Orlando, Florida, from August 17-20, 2003. This year's theme, "Real World – Real Solutions," could not have been more appropriate given the events of the preceding week (The Blackout of 2003).

There were well over 1000 people in attendance, all with varying degrees of knowledge and technical expertise. Whether in the federal government or private sector, if you had questions on energy or energy related issues, chances are the answers were at this conference. Energy managers from federal and state government agencies, utility companies, consulting firms, private companies, and other organizations all came together to share their knowledge and learn about the tools and resources that are available to assist them in conserving energy, resolving energy management problems, increasing energy efficiencies at their facilities, and ultimately saving money.

Energy 2003 offered 11 workshop tracks with multiple sessions in each.

These included:

- Acquisition
- Alternative Financing
- Energy Markets
- Energy Security and Distributed Generation
- Federal Leadership
- Fundamentals for Energy Managers
- Navigating Energy Alternatives
- New Technologies
- O&M for Energy Efficiency
- Sustainable Building Design
- Transportation

The workshop included a plenary address by David Garman, DoE's Assistant Secretary of Energy Efficiency and Renewable Energy. Garman stressed the need to bring reliable and affordable energy technologies to the marketplace and addressed the recent power outages in the Northeast and Midwest, fielding several questions from the audience.

Also, the Federal Energy Management Advisory Committee (FEMAC), which was established by Executive Order 13123 to provide public and private sector input to

the Secretary of Energy on achieving energy efficiency goals for the federal sector, held their annual public meeting at the workshop.

This year, there were more than 400 exhibit personnel on hand to provide information and answer questions about their products and services. The energy exposition and workshop also offers optional pre-workshop tours. This year's tours included a sold out behind-the-scene look at Disney World operations, a tour of the Florida Solar Energy Center, and a look at several energy-efficient facilities in the Orlando area.

Mr. John Powers, founder of the Powers of Motivation Institute, gave the closing address. Powers authored four best-selling books and worked with more than 1,000 major corporations and associations on how to deal with change, problem solving, and effective communications.

POC is David Williams, (703) 428-6175 DSN 328, e-mail: David.Williams2@hqda.army.mil

David Williams works in the Facilities Policy Division of OACSIM. **PWD**

## Second annual Army Energy Management Forum held

by Graham Parker

The Office of Assistant Chief of the Staff for Installation Management (OACSIM) and the Installation Management Agency (IMA) held the second annual Energy Management Forum August 21-22 in Orlando, FL, in conjunction with the DoD/DOE/GSA-sponsored Energy 2003. Participants in the Forum included staff from HQ-IMA, IMA Regional Offices (PARO/SERO/SWRO/NERO/NWRO), OACSIM, CERL/ERDC, Huntsville and Headquarters, U.S. Army Corps of Engineers, DOE/FEMP, and the Bonneville Power Administration. Pacific Northwest

National Laboratory (PNNL), who provides technical support to the Army's energy program, organized this year's Forum.

The agenda for the Forum centered on topics relating to the organization and energy management program strategy of the new IMA as well as technical topics related to energy-efficient projects and strategies. John Nerger, Director Facilities and Housing, OACSIM, and George Carlisle, Deputy Chief Operations, IMA, gave the keynote presentations. Satish Sharma, Chief Utilities and Energy Branch, OACSIM moderated a lively discussion on key issues



George Carlisle, Deputy Chief, Operations, HQ-IMA gives the opening address at the Army Energy Forum.



# OACSIM sponsors industry forum on ESPC

by David Williams

Energy Savings Performance Contracts (ESPC) are one of the Army's primary vehicles for reducing energy consumption and increasing energy efficiencies. The Army continues to make strides in improving its overall ESPC program.

On July 9-10, 2003, the Facilities Policy Division of the Office of the Assistant Chief of Staff for Installation Management (OACSIM) sponsored an industry forum to discuss and improve ESPC policy and execution. In attendance were representatives from OACSIM, Headquarters Installation Management Agency (HQ IMA), US Army Corps of Engineers (USACE), Regional and Installation representatives, as well as Energy Services Contractors (ESCOs).

There were multiple areas of concern, many of which were previously identified in an Army Audit Agency report dated May 23, 2002. Following are four of the many areas that were discussed and the potential solutions that were generated.

*Developing policies and guidance to improve the proposal review process.* It was determined that this could be accomplished by standardizing formats for contractor proposal submissions, which could be accomplished by using the Federal ESPC Initiative for-

mat, where applicable.

*There is too much ambiguity in the energy savings baselines.* It was determined that as previously recommended, creating benchmarks would provide the appropriate level of evaluation of the energy baseline.

The issue of *project bundling* sparked spirited discussion. Whether bundling across installations or energy conservation measures (ECMs), the question becomes what are the paybacks? This practice is somewhat commonplace and can be maximized by developing criteria and detailed procedures based on ECM's and payback.

It was recommended that *installations be provided additional guidance on contracting techniques.* The working group agreed that the ultimate goal was to ensure best value to the government. A better price reasonableness model would facilitate that goal.

Here are some of the other areas of discussion:

- Measurement and Verification
- Financing of ESPC
- Renewable Energy and ESPC
- O&M and Energy Baseline
- Annual Reports
- Technical Evaluation of ECMs

In an effort to provide a more consistent and comprehensive ESPC program, OACSIM is working toward centralizing many of the ESPC processes. And although some of the processes necessary to generate a viable ESPC may be difficult or somewhat complicated, a successful ESPC project can benefit the Army, the ESCO, and the surrounding community for many years into the future.

POC is David Williams, (703) 428-6175 DSN 328, e-mail: David.Williams2@hqda.army.mil

David Williams works in the Facilities Policy Division of OASIM. **PWD**

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(continued from previous page)

and requirements facing the Regions and installations in FY04 and beyond to meet energy and water management goals.

Other Forum topics included ECIP/ESPC/UESC and other funding and financing of projects, a recently launched natural gas risk management strategy, an update on the passage of the new Energy Bill, annual energy reporting requirements, training, sustainable installation planning, strategy for development of installation long-range energy management plans, energy security planning, and load reduction/demand management and renewable energy assessments being undertaken at Army installations.



John Nerger, Director, Facilities and Housing, OACSIM, talks about the Army transition in FY04 at the Army Energy Forum.

The second day of the Forum focused on working critical issues, facilitated by dividing the participants into breakout groups for open and moderated discussions. The groups were then re-combined and each identified three to five critical short-term needs/issues for IMA and ACSIM action over the next several months.

Copies of the agenda, PowerPoint presentations from the Forum and a summary report of key forum outcomes are available at: <http://www.pnl.gov/buildings/army.html>

POC is Graham Parker, (509)375-3805, e-mail: graham.parker@pnl.gov

Graham Parker is a Senior Research Engineer at the Pacific Northwest National Laboratory. **PWD**



# Workshop touts sustainable design as "right thing to do"

by Alexandra K. Stakhiv

The Federal Energy Efficiency and Sustainable Design Workshop sponsored by the Association of Energy Engineers and the Society of American Military Engineers was held on 31 July 2003 in McLean, Virginia. This was the second in a series designed to bring together government with industry professionals, businessmen and various energy associations. To that end, policy makers, government representatives as well as industry representatives were invited to discuss the role of efficiency and sustainable design as well as future policies for sustainable design in government, military and commercial buildings.

Representing the Army was the OAC-SIM's (Office of the Assistant Chief of Staff for Installation Management) Robert Sperberg, Chief of the Facilities Policy Division. "Sustainability is all about developing and building facilities with systemic considerations for environmental impacts, energy use, natural resources, economic principles, and quality of life," Sperberg began. The Army is looking at not only sustainable housing and facilities, but also sustainable training sites and ranges, and other aspects of installation operations. Sustainability is more than just addressing the environment, he said. It is the full life-cycle of what happens on installations.

The Army approach to sustainable installations is to ensure that resources are consumed no faster than they can be replenished and meet present requirements without compromising future generations' ability to enjoy a quality of life. Sperberg explained the principles of sustainability—"We can't continue digging out oil and coal recklessly and use solvents, water, land and air indefinitely. Such non-renewable resources must be husbanded to ensure that future needs can be met. We can achieve installation sustainability through sustainable operations, land management and infrastructure development."

"Since Army training is necessarily 'destructive' with weapons firing, operation of heavy armored vehicles, and movements

of large troop units across the land, how do we keep going to the same ranges for training day after day while ensuring they don't turn the area into barren wastelands," Sperberg asked. The Army is answering that question through the use of programs such as ITAM (Integrated Training Area Management) to create sustainable ranges and training areas with ecosystem management and biodiversity as well as smart master planning and innovative facilities engineering.

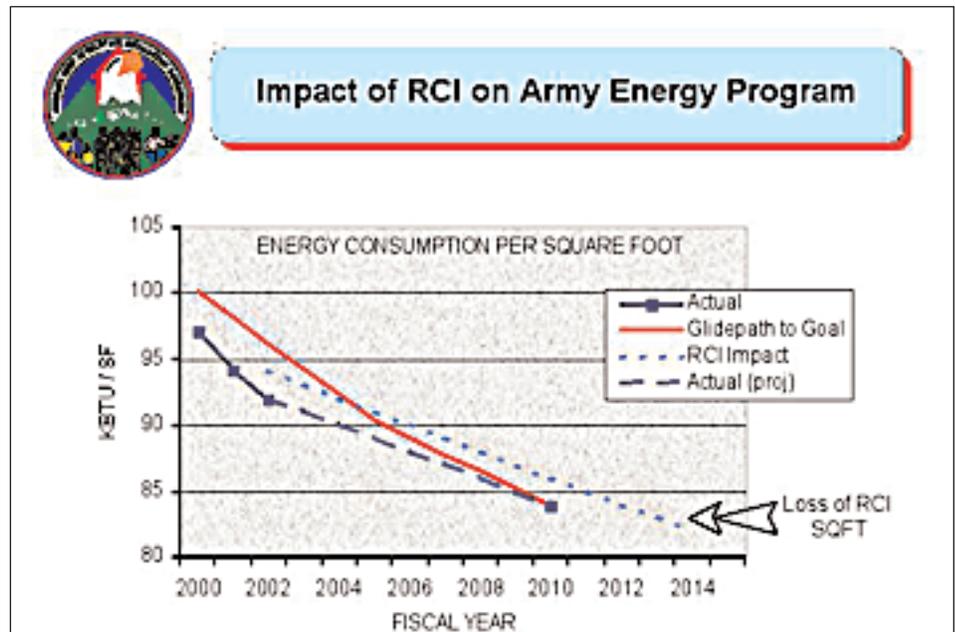
"We are achieving Army energy reduction goals," continued Sperberg. "From 1985 to 2002, we decreased energy consumption by an amazing 28.7%. However, there are challenges on the horizon. Restationing, base closures, continuing stresses on the BASOPS and SRM accounts, and an aging installation infrastructure will make it more difficult to maintain the rate of energy reductions into the future."

The Army is trying very hard to meet its goals through special programs such as the use of ESPC (Energy Savings Performance Contracts), alternative fuel vehicles, renewable energy (solar power and wind power) and utilities privatization. "We are exceeding DoD goals by leasing alternative fuel

capable vehicles for nearly 80% of our leased non-tactical vehicle fleet," Sperberg said. "More and more installations are providing alternative fuels for both private automobiles and government non-tactical vehicles."

"Out of 351 eligible systems for utilities privatization in the United States, the Army has privatized 78 utility systems over the last ten years," Sperberg said proudly. "The Air Force has privatized 7 and the Navy only 6. Privatization ensures our aging utility plants are renovated, better technologies are installed, and a sustainable approach is implemented for managing our resources over the long term."

We have often heard that the Army's utilities systems are very old and that privatization will bring them up to modern standards, but there's more to it. It will be uneconomical to privatize a significant percentage of utility systems. For those natural gas, electrical, water, and waste water systems that must be retained, the Army will modernize generating plants and distribution systems by 2010 to meet OSD directives. Both "privatization" and "modernization" will aid the Army's sustainable energy programs by placing





appropriate technologies and smart managers along with a heightened awareness of fuel consumption and renewable energy options out in front for implementation decisions on a recurring basis.

In June 2001, the Army began using the SPiRiT scoring system to characterize the sustainability of a building on a 1-100 point scale to achieve bronze, silver, gold, or platinum status. According to Sperberg, LEED was heavy on the environment and did not cover everything needed, so the Army developed its own.

“In FY02, everyone had to achieve the bronze level on their MILCON. This year, we raised the minimum SPiRiT rating to gold beginning with FY06 MILCON projects,” Sperberg said. In return, the Army will get lower operating costs, lower life-cycle ownership costs, higher user health and well-being, and higher productivity and morale.

Sperberg discussed sustainable design application and what happens at planning charrettes and how projects get rated. “We developed the MILCON Showcase Projects program to evaluate the efforts and costs associated with reaching gold and platinum ratings,” Sperberg explained. “We have good buildings being built. We’re just trying to make good buildings better.”

The U.S. Army Corps of Engineers is currently designing and constructing facilities to meet Army requirements. More importantly, they are demonstrating that across the spectrum of new facilities design and construction, they can incorporate the sustainable design process. “We have put together a validation team to show that there is a credible way to validate successful sustainable projects,” said Sperberg. “Early reports show that our buildings are being undervalued and our evaluators too critical, a confirmation that sustainable design does not increase project costs. By highlighting successful projects, we hope to increase awareness of the overall Sustainable Design and Development program. The team will complete its report by the end of FY03.”

Army future goals include the need to continue raising sustainable design awareness; continue SPiRiT validations and show that sustainable design is achievable; apply sustainable design to operations and repair; track project and life-cycle costs; focus more on the success of showcase facilities; and work with focus groups.

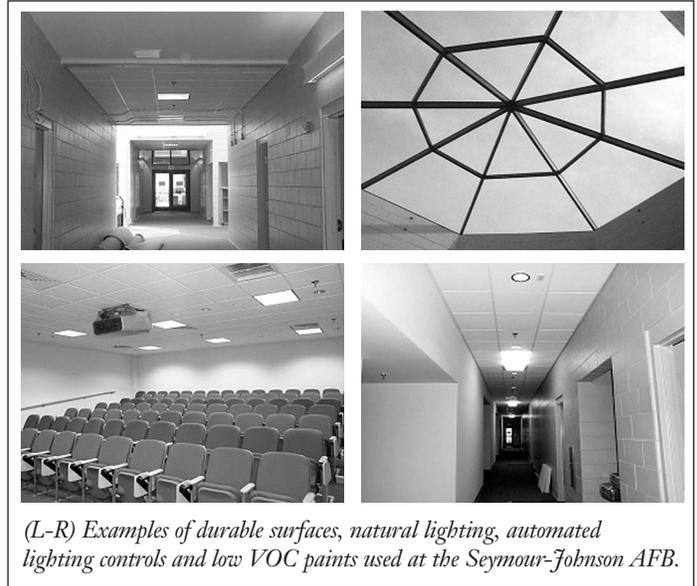
The Air Force’s stance on sustainable design was put forth by Jeff Merz from Air Combat Command as lessons learned. The Air Force’s bible on sustainable design is the web-based “Whole Building Design Guide (WBDG),” which provides technical resources to complement the process guidance in the USAF Guide.

The LEED (Leadership in Energy and Environmental Design) rating system is used as our organizational framework, said Merz, identifying LEED as the Air Force’s preferred self-assessment metric.

“Our goal is to have all MILCON projects in the FY09 program capable of achieving LEED certification, starting with 20% of each command’s FY04 projects,” Merz said. However, the application of actual LEED certification is still at the discretion of the major command.

Merz stated that to the Air Force, the *process* is just as critical to the success of the project as the *technologies* are. Thus project teams should involve all stakeholders from the outset. Use of planning charrettes to discuss sustainability and setting goals for inclusion in project specifications are strongly encouraged. Integrated design techniques are a must.

“The Air Force’s funding policy is to do the job within budget with no automatic *plus-ups* for construction,” Merz continued.



(L-R) Examples of durable surfaces, natural lighting, automated lighting controls and low VOC paints used at the Seymour-Johnson AFB.

Although more design funds for energy modeling or even advanced studies may be needed, Merz conceded. “What gets measured...gets done,” is a popular refrain, he said.

Examples of completed sustainable ACC projects cited by Merz include the Squadron Operations Facility on Seymour-Johnson AFB in South Carolina. This was ACC’s first attempt at a green building, using durable surfaces, natural lighting, low VOC paints and automated lighting controls. The Fitness Center at Barksdale AFB in Louisiana was the first ACC LEED project registered. It boasts reflective parking surfaces, natural grasses in landscaping, alternative transportation, recycled rubber flooring and plastic lockers as well as compact fluorescents. The fire station at Homestead AFB in Florida started out as a new building but turned into a sustainable pilot project renovation after it took a significant and unexpected budget cut. This facility employed an innovative contracting strategy where a small business construction contractor was chosen and brought on board as part of the team during the design process.

“For the Air Force, sustainable design is still evolving,” said Merz. “You need to designate a champion to help keep up and



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maintain the focus. Using LEED is important because it provides a standard measure of success and a guide for methods to be used. My advice is to start early and be involved in planning, siting and programming to include sustainable features. This will help you to evaluate your options and associated costs early in the planning and design processes,” Merz concluded.

Dennis O. Talton, the Sustainable Development Program Manager for NAVFAC, presented sustainable development from the Navy’s viewpoint. Using the 1987 Brundtland Commission’s definition of sustainable development, Talton said, “It is development that meets the needs of the present without compromising future generations’ ability to meet their own needs.”

Among the reasons given by Talton for pursuing sustainable development was marketing. “Our clients expect it,” he said.

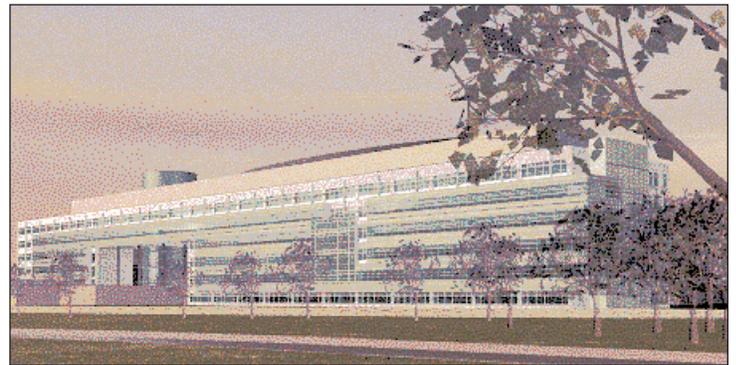
Like the Air Force, the Navy also uses the LEED green building rating system for certification. Talton explained the point system for determining the certification levels of certified, silver, gold and platinum out of a possible 69 points.

Talton has learned that the Navy’s major barriers to successful implementation of sustainable design are a lack of the necessary knowledge, perceived economic impacts and a lack of management buy-in. “Training is the initial and primary strategy to overcome these barriers,” Talton stressed.

The budget structure and process of the federal government is yet another challenge that we must overcome. Developing a standard process for integrating sustainable features and costs while developing the project 1391 and a buy-in by management can go a long way towards alleviating these problems, he continued. “As far as the 1391 goes, you should resolve the funding barriers as soon as possible, develop a standard process and market it. Take every strategic opportunity to keep upper-level management informed and make sure your planners and programmers and designers are receiving all the training they need to accomplish the job. The integration of sus-



*A few NAVFAC sustainable design projects.*



tainable design into all business lines processes is crucial,” said Talton.

The Whole Building Design Guide (WBDG) is just one of the planning tools the Navy is using. Others include the Unified Facilities Criteria, the WBDG Resource Page, which compares LEED credits to AITFP standards, and the Design Build Master, a roster of sustainable design requirements.

The Navy’s whole building design approach aims to create a successful high-performance building that applies integrated design during the planning and programming phases with everyone involved and interacting closely, to include the building occupants and maintenance personnel. Buildings are designed and constructed with many objectives in mind. The WBDG states that all buildings should be accessible, aesthetic, cost-effective, durable, functional, productive, safe and sustainable. Talton explained that minimizing energy consumption is a direct goal since our supply of fossil fuel is rapidly diminishing. It is essential that we find ways to reduce load,

increase efficiency and use renewable fuel resources in federal facilities.

“Does it cost more to build green?” asked Talton. “Yes, most of the time it does cost more, but the first costs are usually life-cycle costs and you’re going to get the money back with time in addition to saving resources and reducing pollution. NAVFAC is committed to investing and pursuing the change of integrating sustainable design into all phases of the acquisition process and the life-cycle of Naval facilities,” he concluded.

The workshop ended with questions directed at the speakers and a lively discussion on the application of sustainable design and development. All present walked away with the feeling that yes, it costs more initially but it is important that we all adhere to creating and maintaining sustainable buildings because it is “the right thing to do.”

*Alexandra K. Stakhiv is the editor of the Public Works Digest. PWD*



# CENET 2003: Working with IMA's Regional Offices

by Roch Ducey

The Corps of Engineers National Energy Team (CENET) held its annual meeting in San Antonio, Texas, during the summer of 2003. Since the turn of the century, CENET meetings have addressed how federal energy policy has begun to stress not only energy conservation, but also energy security, reliability, and sustainability. In the past few years alone, there have been multiple major triggering events for this policy shift:

*Shortages of electricity in California in summer 2000 caused massive rolling blackouts and significant short-term price increases.*

*Shortages of heating fuels in the United States during the relatively severe winter of 2000-01 caused additional blackouts and energy price increases.*

*The tragic events of September 11th and the follow-on anthrax attacks demonstrated both the fragility of the nation's infrastructure and the impact of that vulnerability on personal safety.*

*The bankruptcy of Enron, one of the largest energy companies in the world, raised questions about the long-term availability and viability of the nation's energy supplies.*

*And most recently, the devastating power outages along the U.S.-Canadian eastern corridor, that left tens of millions of customers without electricity and caused hundreds of millions of dollars in economic loss.*

CENET meetings have addressed how these events and the subsequent shift in national energy priorities have impacted Army energy policy, including ongoing and future energy research and development (R&D) programs. Energy conservation and reduced energy usage are still key issues, except in the context of how those issues are strategically integrated into a policy that maximizes energy security, reliability, and sustainability.

The recent CENET 2003 meeting in San Antonio was specifically organized to explore these issues from the perspective of how they will be implemented through the Army's new Installation Management

Agency (IMA) and how these energy initiatives relate to other programs like Army Transformation, Fort Future, Installation Battle Lab, Force Protection, and Homeland Defense. Energy representatives from IMA Headquarters, and the Northwest, Northeast, Southwest, Southeast, and Pacific Area Regional Offices attended CENET 2003 and, in the opening sessions, presented their views on energy issues at the Army installations in their regions. A common thread in all of the IMA briefings was that they are understaffed when it comes to energy concerns and can use all the assistance that is available. Several of the IMA



IMA Energy Representatives (left to right): Muthu Kumar (HQ), Steve Jackson (SERO), Leonard Thomas (NWRO), Gary Cox (NERO), Bill Wong (PARO), and Ernesto Ortiz (SWRO).

energy representatives had only been in their positions for a short time, with IMA-HQ's Muthu Kumar only taking over his post the week before. CENET 2003 was the first time that all of the IMA energy representatives had ever been together as a group.

Addressing the IMA regional energy representatives' openness to assistance from outside agencies was another major objective for the organizers of CENET 2003. In the past, the Assistant Chief of Staff for Installation Management (ACSIM) has relied on a number of different organizations within the Army, DoD, DOE, acade-

mia, and the private sector to support a variety of Army energy initiatives, both programmatically and at the installation level. These organizations were invited to attend CENET 2003 and brief the IMA energy representatives on their past and current Army energy projects and their capabilities for continuing support. Organizations that participated were:

- U.S. Army Corps of Engineers, HQ
- ACSIM, HQ
- USACE Engineer R&D Center/CERL
- USACE Huntsville Division
- Defense Energy Support Center
- U.S. Air Force
- DOE Federal Energy Management Program
- Pacific Northwest National Laboratories
- Sandia National Laboratories
- University of Illinois
- University of Texas A&M
- Encorp

Installation level-personnel also presented energy project briefings. Bill Stein from Fort Huachuca, Arizona, talked about a number of ongoing energy projects and Steve Rowley from Fort Drum, New York, briefed wind turbine and micro-turbine projects being conducted there.

For more information on CENET 2003, including the three-day agenda, a complete list of those who attended, and access to the briefings that were presented, visit the CENET website at [www.cecer.army.mil/same/CENET2003/CENET2003.htm](http://www.cecer.army.mil/same/CENET2003/CENET2003.htm), or call Roch Ducey at (800) USA-CERL, ext. 7444, e-mail: [roch.a.ducey@erdc.usace.army.mil](mailto:roch.a.ducey@erdc.usace.army.mil).

Roch Ducey is a principal investigator at the U.S. Army Engineer Research and Development Center's Construction Engineering Research Laboratory in Champaign, IL. **PWD**



# Attention, installation support careerists!

by Kristine Allaman

You may have heard about a new DOD career field associated with the DOD Acquisition Workforce Improvement Act (DAWIA), called the Facilities Engineering Career Field (FECF). This is one of 13 career fields under DAWIA-- many are familiar with the Contracting Acquisition Corps, of which our contracting and construction engineer community are members.

This new FE Career Field will enable you to become a certified acquisition professional and qualify for future positions which will be designated as requiring certification. The Navy and Air Force have already designated a number of positions in this manner, and the Army is currently beginning the process of deciding which positions to include.

This career field coincides with many CP-18 positions (Engineers and Scientists) and functions, but does not replace the Army Career Program. You may continue being in CP-18 and pursue certification in the DAWIA Facilities Engineering Career Field; they are complementary. People who are already certified in the Contracting Career Field will not need to become additionally certified in the FE Field, unless they desire to do so as a secondary certification.

The acquisition workforce will include staff that acquires real property by leasing or construction, and also those who perform life-cycle management and disposal of the property. The official definition of the Facilities Engineering Career Field is: *The Facilities Engineering Career Field encompasses a variety of professional individuals with diverse skills focused on the design, construction, and life-cycle maintenance of military installations, facilities, civil works projects, airfields, roadways, and ocean facilities. It involves all facets of life cycle management from planning through disposal, including design, construction, environmental protection, base operations and support, housing, real estate, and real property maintenance. Additional duties include advising or assisting Commanders, and acting as or advising program managers and other officials as necessary in executing all*



Kristine Allaman

*aspects of their responsibilities for facility management and the mitigation/elimination of environmental impact in direct support of the Defense Acquisition process.*

There will be 3 levels of certification. Levels I and II contain no special requirements other than experience in related functions and passing a self-paced, on-line course within 3 years of entering a designated position. The level I course is estimated to take about 20-25 hours, and the level II course is estimated to take about 40-50 hours. If you are already working in an area related to the definition above, you will likely be familiar with the course material. The level III course has yet to be developed.

There has been a lot of discussion about education requirements under DAWIA. There is no degree requirement for any of the three levels of the FE Career Field. However, as you move into a designated grade 14 or above position, an additional requirement for membership in the Acquisition Corps steps in. Under current policy, any designated position that is a 14 or above is considered a Critical Acquisition Position (CAP). Someone filling a CAP must be a member of the Acquisition Corps.

Acquisition Corps requirements include:

- Bachelor's degree or ACPB certification [using experience and other training].
- At least 12 semester credit hours in

designated areas.

- 4 years acquisition experience.
- 3-year commitment and signed mobility statement.
- If 10 years acquisition experience by 1 Oct 1991, there is no education requirement.

Since we are on the threshold of being a part of the acquisition workforce, here is more information on your role in DAWIA and your career.

## Each Individual

You have choices to make over the duration of your career. Be informed. Be active in preparing and implementing your individual development plan (IDP). Continue to use the many resources available on the Headquarters USACE, Army, and OPM websites. Of particular interest for career issues is the link to workforce development information:

<http://www.hq.usace.army.mil/cemp/cp18/index.htm>. This site contains information on the Engineer and Scientist Career Program as well as other pertinent career information. Please keep in mind that the DAWIA Facilities Engineering Career Field is a complement to your Army Career Program. It is not a replacement. Some useful web sites are: <http://www.dau.mil> for the Defense Acquisition University and <http://www.fecf.org> for the Facilities Engineering Career Field (this site will eventually migrate to the DAU site).

The chart below shows the three levels of the FE Career Field, with an explanation of the three required courses. The ACQ 101 and FE 201 will be online courses. FE 301 is being developed, but is expected to combine online with classroom.

## Supervisors and team leaders

You must expand your concept of the Individual Development Plan (IDP) to a more holistic look at the individual's career. You may want to recommend college credit courses in accounting, business finance, law, contracts, economics, marketing, ➤



# CP-18 Career Program Managers Workshop joins SAME

by Ed Gauvreau

Over 90 career program managers and human resources personnel converged on the Dayton Convention Center in Dayton, Ohio, for the annual CP-18 Career Program Managers Workshop. For the first time, the workshop was held with the Society of American Military Engineers' Great Lakes Regional Conference, through a partnering agreement with SAME.

Wednesday, 20 August 2003

The CP-18 Career Program Planning Board meeting was held Wednesday morning prior to the start of the workshop. Several new board members were welcomed, including Michael White, new Chief, Operations Division, Directorate of Civil Works, HQUSACE, and Chris Hinton-Lee, new Chief of Military and Technical Services Directorate, Great Lakes and Ohio River Division, USACE. Many topics were discussed, including a renewed emphasis on communications and developing the Communities of Practice as career paths.

Dwight Beranek, Deputy Director of Military Programs, HQUSACE, kicked off the program as the new Functional Chief Representative for CP-18. Beranek gave an overview of the Army's career program

activities this year, including both the Career Program Planning Council meeting in May and the FY 04 Funding Prioritization meeting in June. He indicated that CP-18 has fared well in the past and present, gaining \$715,000 in training funds for FY 04, and that we would pursue an increase of \$200,000 to \$300,000 for FY 05. In short, the career programs with the best documentation and program execution history are the ones who get the most funds. Beranek noted that CP-18 can improve its funding next year and beyond, especially given current and pending changes for both USACE and the Army at large.

Touching briefly on a number of current programs within CP-18, including the DA Intern Program, Beranek emphasized that all interns, regardless of funding source and location, should follow the same Master Intern Training Plan. This should include all functional areas within a USACE district, plus time at an installation and multi-function positions. The objective is for the interns to learn and develop as these are our future experts and leaders. Also, the number of overseas deployments are expected to increase.

The Advancing Minorities in Engineering (AMIE) program was mentioned, along

with the Student Cooperative Education Program (SCEP), which currently is in place at 10 historically black colleges and universities. SCEP is an effective tool in increasing diversity within CP-18, coming into play as the Army deploys all over the world in different regions/cultures.

Beranek laid out a number of challenges to the attendees: 1) Increase the volume of communications on career programs and development; 2) Increase participation with the civil works and DPW communities, the Installation Management Agency and the ACSIM; 3) Increase functional educational opportunities, whether in-house or outside provider; and 4) Define and recast CP 18 community into Communities of Practice – with interdependence and integration; 5) Share lessons learned and best practices; 6) Encourage Leadership Development Programs at all grade levels; and 7) Encourage more functional and geographical mobility.

Linda Garvin, Director of Real Estate, HQUSACE, Dwight Beranek, and Susan Duncan, Director of Human Resources, HQUSACE, made a panel presenta- ➤

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quantitative methods, organization and management (business administration, program management, land management, forestry), depending on individuals' development plans and desires, and certification areas of interest.

The three mandatory FE Career Field courses should be phased in as an employee moves up in grade. The employee's TAPES should contain references to the continuing learning requirements, and you as a Supervisor also need to look for opportunities to allow the employee to perform continuous learning and be exposed to higher levels. Continuous learn-

ing is interpreted very broadly, but can include PROSPECT courses, PMBP training, Corpspath, briefing someone at a higher level, being an instructor at a PROSPECT or other related course, providing mini-training to others in the office.

We will continue to provide information as it becomes available and positions are designated for this Career Field.

POC is Mark Grammer, (202) 761-4127,  
e-mail: [mark.grammer@usace.army.mil](mailto:mark.grammer@usace.army.mil)

Kristine Allaman is the Chief of the Installation Support Division at HQ USACE. **PWD**

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tion focused on the changing culture of the workforce and the need to renew and revise the skill sets needed. According to Garvin, CPMs should emphasize coaching and mentoring. Leadership happens at all levels of the organization; therefore, it should be developed at the beginning of one's career and continually improved. Beranek described some basic tenets that good career managers should have, including advisor, coach, proponent, manager, administrator, coordinate, publicize and mentor. He called for all CPMs to become knowledgeable on the Army regulations dealing with civilian career development and mentoring and to constantly communicate with their employees about their careers and opportunities for development. Duncan gave a brief overview of the Strategic Army Workforce initiative, which would group 20,000 senior Army managers and leaderships into a cadre where the Army would centrally manage training and assignments, the same as the uniformed personnel. HQDA is scheduled to start implementation in FY 04. CP-18's John Shearer, HQUSACE, is on the HQDA team.

Wednesday evening saw a joint SAME-CP-18 icebreaker reception at the Engineering Club of Dayton, which dates back to the late 1800s and has had many distinguished members, including the Wright Brothers.

#### Thursday, 21 August 2003

Thursday morning kicked off with a panel discussion by three of CP-18's new career track leaders. Kristine Allaman, Chief of the Installation Support Division, HQUSACE, opened the discussion with the current initiatives being developed by ISD for the DPW community of practice in conjunction with ACSIM and IMA-- 1) Installation Knowledge Online (IKO), a web-based platform for collaboration and sharing already successfully used by Army personnel in Afghanistan and Iraq (<http://www.cecer.army.mil/kd/iko/>); 2) Re-invigoration of master planning career development through increased opportunities for training, networking, certification and DoD-wide workshops; and 3) "Fort Future," a system of systems uniting cur-



*Air Force General Ralph "Ed" Eberhard, NORTHCOM Commander, gave the keynote address at the SAME Luncheon.*

rent and future computer modeling tools to form virtual models of installations to plan alternate solutions for future installations.

Pat Rivers, Chief of the Environmental Division, HQUSACE, emphasized the development of environmental career track initiatives, including a separate page on the CP-18 web site, and improving career track communications. She also mentioned improving the web site to include current information on career development standards, updating web links, and clarifying relationships with other programs.

Phil Hunt, Deputy Chief of Programs Management Division, Directorate of Military Programs, HQUSACE, discussed the career track for project/program management. Several districts have hired a private company specializing in project management to review their current skill sets, determine gaps in training, and develop products to remedy those gaps.

There was extended discussion on the issue of if one goes into a GS-340 program

management position, are they still part of CP-18. Some activities do not get applicants from the 800 series for a 300-series job where the listed requirements do not reflect what requirements are truly needed. Also discussed was whether PMs should pursue professional certification.

Mike White, Chief of Operations Division, Directorate of Civil Works, HQUSACE, and Lacey Evans of Baltimore District gave a presentation on the Natural Resource Management Career Development Steering Committee (NRMCDSC) developing a training program for USACE's Civil Works Operations personnel responsible for operating and maintaining levees, locks, dams, reservoirs, water treatment plants, and other infrastructure projects throughout the U.S. White challenged the attendees to connect with all employees in operations, both wage grade and professionals.

Tab Brown of USACE's Great Lakes and Ohio River Division discussed the Planning Associates Program, which seeks to re-build in-house USACE water resources planning capability through structured master's degree programs. USACE is



*Stan Gembicki of Baltimore District, Kenneth Bailey of Norfolk District, and Edward Kanciruk of Fort Rucker listen intently to the presentation by David Snyder, HQDA.*

partnering with six universities to offer this program and developing five national centers of expertise on various areas of water resource planning, evermore critical with growth and development worldwide.



The joint SAME/CP-18 Luncheon was attended by over 400 people, with Air Force General Ralph "Ed" Eberhard, Commander of the newly formed Northern Command as the keynote speaker. GEN Eberhard gave his overview of the current Global War on Terrorism, as well as the challenges of standing up a new command to protect the U.S.

Thursday afternoon's session began with David Snyder, Assistant G-1 for Civilian Personnel Policy, HQDA, who discussed continued progress in shortening the time to hire personnel and some initiatives in process. The chief initiative is the National Security Personnel System, which would take the entire Department of Defense out of the current personnel system and establish their own, similar to what is being done at the Department of Homeland Security. The proposal would abolish the current General Schedule and go to a pay-banding system to provide greater flexibility for recruitment, retention, promotion and reassignment. Other topics discussed were the Strategic Army Workforce, BRAC 2005, consolidation of the military and civilian human resources offices at Army Headquarters, and revision of the role of civilian human resources in the Army.

Susan Duncan followed with an update of current USACE and CP-18 initiatives, including progress with the President's Management Agenda for human capital, moving the overall rating from red to yellow, with progress still rated as green and moving forward; launching the new USACE employment web site ([www.usace.army.mil/employment](http://www.usace.army.mil/employment)); and meeting the Chief's vision of USACE 2012; and USACE workforce realignment, including limited buy-outs for FY 03. Pat McNabb of HQUSACE followed up with a discussion of the new Department of the Army and USACE policies for reimbursable payment of expenses for professional registration and licensure.

Ed Gauvreau, Functional Representative for CP-18, finished off the day with presentations on the Competitive Professional Development (CPD) and the CP-18 Leadership Development Programs. For the CPD, CP-18 has over \$700,000 available



*William Sugg of the Installation Management Agency gives a progress reports on the stand-up of IMA.*

for short-term, long-term and university training, and there are changes in HQDA procedures for obtaining funds. For the LDP, Sterling Johnson of Philadelphia District and Kenneth Bailey of Norfolk District, graduates of the program, gave their accounts of how the program has helped them gain a greater strategic vision of the Army and made them more valuable to their organizations. Gauvreau also discussed the possible future changes to the LDP, including integration with USACE District and Division LDPs. A follow-on conference with all of the LDP proponents is currently scheduled for late January-early February 2004.

*Friday, 22 August 2003*

On the final day, Dwight Beranek led a presentation on the OSD-led Facilities Engineering Career Field, which would require almost anyone involved with the acquisition of facilities to start a process to gain acquisition certification through the Defense Acquisition University. The topic generated much discussion both for and against the initiative. Beranek said that completion of this program would not only enhance their credentials, but also make careerists competitive for future positions that now require membership in the Acqui-

sition Corps. NAVFAC started this program and the Air Force has followed suit. It is imperative that the Army engineer community join or be left behind. The DAU web site is [www.asc.rdaia.army.mil](http://www.asc.rdaia.army.mil).

Bill Sugg from Headquarters, Installation Management Agency (IMA), explained how IMA it will improve the level of service and standards at all Army installation worldwide. He stressed key actions to establish criteria for Common Level of Army Service Support (CLASS, implement activity cost basing for services, re-invigorate master planning as a key function, and incorporate the new Installation Design Standards and guidance throughout the Army.

During the wrap-up, a recurring comment was the need to improve communications with all members of CP-18, especially at the district and installation/DPW level and to announce that CP-18 is alive and well and has resources to help employees in career advancement. Most attendees said the idea of a joint conference was very good, especially for networking, but felt more joint activities should be included and overall conference logistics improved. Further, interns and mid-level careerists should be invited to participate to ensure that CP-18 is truly serving employee needs. While a good number of HR folks were present, it was felt that more should attend to gain awareness of the program and the CP-18 web site should become more dynamic and kept up to date.

The final event was a joint luncheon with SAME, featuring BG (P) Steven Hawkins, Commander of the Great Lakes and Ohio River Division, USACE. BG (P) Hawkins gave a stirring and informative presentation on his recent deployment to Iraq in support of Operation Iraqi Freedom.

All the presentations and information papers are located on the CP-18 web site at <http://www.hq.usace.army.mil/cp18conf/cp18conference.htm>.

*POC is Ed Gauvreau, (202) 761-5737, e-mail: [edmond.g.gauvreau@usace.army.mil](mailto:edmond.g.gauvreau@usace.army.mil)*

*Ed Gauvreau works in the Installation Support Division at HQ USACE. PWD*



## HQRADDS revisited

**H**QRADDS is an acronym used for the Headquarters Revised Army DUERS Data System and DUERS is the abbreviation for Defense Utility Energy Reporting Systems. An automated engineering management system that collects energy consumption data (facility & mobility petroleum fuels, non-petroleum fuels, electricity, gases, and water) for active Army, Reserve, and National Guard installations, the system fulfills DoD and Congressional requirements (section 2865 of title 10, United States Code, and Executive order 12123, Greening of the Government through Efficient Energy Management).

HQRADDS also supports DA and DoD energy reporting requirements and provides management and analysis data to installation, MACOM, and HQDA managers. In the near future, HQ IMA and the Regions will have access to the system which resides on the worldwide web. Capabilities include data entry, reporting, and graph creation to facilitate aggressive energy management.

HQRADDS is DITSCAP compliant and fully operational using ORACLE version 8i. Using a Windows 2000 platform, Oracle 9iAS EE (Apache server), and Ora-

cle Server 8i for the applications, HQRADDS is a system with end-to-end security. This tri-level system supplies scalability, minimized network traffic, and simple transactions. User system requirements include a web browser, Adobe Acrobat reader to view PDF formatted reports, and Jinitiator software to display forms on the web.

Users access the HQRADDS application through the main server located at Fort Belvoir using the URL "hqradds.belvoir.army.mil." The HQRADDS main page has links to the Bulletin Board, Manuals, FAQ, Tutorials, and the HQRADDS application. When clicked, the bulletin board link redirects users to the FAQs and provides them with an e-mail address for assistance. The HQRADDS link goes through the process of authenticating and authorizing the user and granting access to the application. Users connect with their AKO ids and self assigned passwords.

HQRADDS allows energy managers at an installation, MACOM, Region, or HQDA to analyze and manage energy use for trends, measure progress toward energy goals/targets, and more effectively manage

energy resources. In addition, it facilitates energy data reporting to DOD, which requires energy consumption data to be reported in a specified format.

However, the data is only as useful as it is timely and accurate. In accordance with AR 11-27, *Army Energy Program*, installations must report energy consumption on a monthly basis. For reporting requirements, review go to AR 11-27, Chapter 4.

Planned enhancements include:

- Enhanced data entry and correction with drop down menus.
- Incorporation of Region access to allow Region Energy Managers to review data and retrieve reports.
- Reinstating user training – Region based (train the trainer) and web based refresher training.
- System name change – TBD

Users are encouraged to e-mail hqradds@hqda.army.mil with concerns regarding the system.

*Functional POC is David N. Purcell, (703) 428-7613, e-mail: David.Purcell@hqda.army.mil; and Technical POC is Jim Asbury, (703) 428-0230, e-mail: James.Asbury@hqda.army.mil. PWD*

## Southeast Region Energy Program launches web site

by Dave Payson

**T**he Installation Management Agency (IMA) Southeast Region Energy Program has developed a web site and online newsletter designed to archive and disseminate information on Energy Program activities and projects throughout the Army's Southeast Region. Steve Jackson manages the IMA/Southeast Region Energy Program.

The new web site is accessed through the IMA at <http://www.pnl.gov/ima-seroenergy/>. The web site was developed and is being maintained by the Department of Energy's Pacific Northwest National Laboratory (PNNL). For over 15 years, PNNL has supported Forces Command and the Southeast Region in their energy programs, including conducting comprehensive Facility Energy

Decision Screening (FEDS) assessments, developing long-range energy management plans, conducting demonstrations of new and emerging technologies at installations, and conducting technical and economic assessments of energy supply and efficiency strategies and projects. The results from these programs – including reports generated from technology evaluations – can be found on the web site.

In addition, the web site provides updated news from the energy community, relevant Army and other federal agency energy-related briefings and reports, presentations from the 2003 Southeast Region Energy Managers Forum, a calendar of events, and links to other energy-related web sites and resources.

The newsletter will be issued monthly via e-mail to the Southeast Region Energy Managers and any others interested in receiving it. It resides on the web site at <http://www.pnl.gov/ima-seroenergy/news/>. Anyone wishing to receive the newsletter can subscribe by following the instructions on the newsletter.

*POCs are Steve Jackson, Energy Manager, Southeast Region, (404) 464-0703, e-mail: jacksons@forscom.army.mil; and Doug Dixon, PNNL Program Manager, (509) 372-4253, e-mail: doug.dixon@pnl.gov.*

*Dave Payson is a senior communications specialist at PNNL. PWD*



## USACE 2012 Installation Support Functional Area Analysis

by Erik Blechinger

Most Corps employees are aware that USACE leadership has a major headquarters restructuring initiative underway. As part of this initiative, a USACE 2012 study was published in February of this year, proposing the objective organizational structure and functions of the U.S. Army Corps of Engineers (USACE). In early May, as part of the 2012 review process, LTG Flowers, USACE Commander, hosted a meeting to discuss the recommendations of the study. The meeting started with a panel of external stakeholders who presented a very effective case on the need for change: Becoming faster, cheaper and more collaborative is critical to USACE's fundamental mission success. Additionally, as bill paying partners, the stockholders also want to be real partners with a real say in how the work is done.

The USACE take-aways from this meeting were:

- Change or be changed.
- We are partners--treat us this way. Be inclusive.
- Project delivery--on time and on budget will show tangible evidence that the change is real and positive.
- USACE's internal processes take too long.
- Congressional and the Nation's homeland security and Iraq reconstruction priorities will mean less resources available for other purposes.

The consensus from this meeting was that further analysis was needed. This second round of analysis would be led by the USACE Major Subordinate Command (MSC) Commanders and would encompass all functional areas and business processes within USACE. The objectives were to meet the designated strategic resource and process goals, to determine at which organizational level functions are best performed, and to identify staffing levels for each function at each echelon. The Functional Area Assessments (FAA) and Business Process Assessments (BPA) were to be completed in time for presentation at the

August USACE Senior Leader Conference.

Each MSC Commander was appointed as a program manager for a business line or a set of business lines. In the Northwestern Division (NWD), BG David Fastabend, and subsequently BG Grisoli, were appointed as the program managers for the business lines of Interagency and International Support, Installation Support, Research and Development, DCSOPS and Homeland Security. These business lines were, in turn, assigned to four project managers.

The Installation Support FAA/BPA project delivery team (PDT) was responsible for the analysis and development of recommendations for the objective Installation Support business line. At the peak of the effort, the PDT consisted of 22 members, representing the Installation Management Agency (IMA), the Office Assistant Chief of Staff for Installation Management (OAC-SIM), HQ USACE, MSCs, and Districts.

The PDT examined the Installation Support functional area, at HQUSACE and MSC headquarters. It followed 16 guiding principles, most notable being to act as one headquarters, to empower, to be inclusive, and to take care of people. The PDT completed their analysis in early July and briefed senior USACE leaders soon after.

The Installation Support FAA team briefed nine recommendations to a HQ USACE senior level review committee. They focused on the elimination or transfer of ISD functions to other organizations internal and external to USACE HQ to increase efficiencies, eliminate redundancies, enhance communication between organizations, or streamline existing processes.

The senior level review committee consolidated the recommendations from all the FAA teams and presented them to LTG Flowers at the Senior Leaders Conference in Portland in early August.



IS FAA PDT meeting in St. Louis.

On 25 August, LTG Flowers published the Draft Objective Organization, along with his review guidance to the field. An iterative review of this draft final plan involves the USACE family, as well as our partners. Their feedback will be used to develop the final plan due out in early October.

So, what does all this mean? As BG Fastabend said, "Change is coming. We have the chance -- the obligation -- to participate in shaping it so that it is meaningful and leaves us a better organization. We have had a chance to participate in this process to date and that participation has made a difference."

"There is a lot of uncertainty before us, not only from this but also from other change initiatives that are out there. We have to deal with it, using the best logic and expertise we can bring to bear. Some might say you have no option here, but in fact, every individual has an option every day: to simply 'give up' or to hang in there, applying all their energy and skill to continue to do what they perceive to be right."

The USACE leadership will be talking about the approved plan and how it will improve USACE support to the Army in upcoming editions of the *Digest*.

Stay tuned!

POC is Erik Blechinger, (816) 983-3232, e-mail: erik.t.blechinger@nwk02.usace.army.mil

Erik Blechinger is the Chief of Installation Support, Northwestern Division. **PWD**

# Creating better business processes

by Donald Tison

The DoD Business Initiative Council (BIC) has passed a milestone, having recently observed its second birthday. Birthdays are often a time to pause and reflect on where we've been and where we're going, and I welcome this opportunity to share the BIC story with this audience. I'd like to describe the BIC structure from the top down, to include a particular focus on the features that make the program different from others that have gone before it.

### The BIC Mission

The BIC was chartered to improve the efficiency of DoD business operations by identifying and implementing business reform actions and reallocating savings to higher priority programs. If this sounds familiar, that's because it is. We've heard or read words like these frequently over the past 10-12 years. The Defense Management Review, the Defense Reform Initiative, and the Business Process Reengineering Program are just a few of the programs the Department has instituted with the same general objectives.

But in spite of the similar objectives shared by the BIC and its predecessors, it is the differences between them that are truly noteworthy, and that have enabled the BIC to continue to receive the willing, enthusiastic participation of the Services for two years. There are a number of design features that set the BIC apart, with the following being the most significant:

- BIC membership is limited to the most senior executives from the Services, the OSD Staff, and The Joint Staff.
- Day-to-day leadership is provided by the Military Departments rather than the OSD Staff.
- BIC initiatives are evaluated, and decisions made, in a streamlined fashion.
- All savings from BIC initiatives are retained by the Services.

### Executive-Level Membership

The BIC consists of just seven individu-

als. The Council is chaired by the Under Secretary of Defense (Acquisition, Technology, and Logistics), and its additional members are the Secretaries of the Military Departments, the Vice Chairman of the Joint Chiefs of Staff, the Under Secretary Defense (Personnel and Readiness), and the Under Secretary of Defense (Comptroller). This senior-level membership means that the BIC is more willing to accept reasonable degrees of risk in taking on difficult but potentially valuable initiatives, and less likely to be deterred by bureaucratic roadblocks to progress.

### Day-to-Day Leadership

Although the BIC is chaired by the USD(AT&L), that is the only level at which a member of the OSD Staff is "in charge." At the outset, the BIC members established a subordinate element, the Executive Directors (ED), and gave it broad responsibility and authority to conduct the operational business of the BIC. While each BIC member is represented by the EDs, the chairmanship of the EDs is held by the Military Departments on a six-month rotating basis. Reporting to the EDs are seven

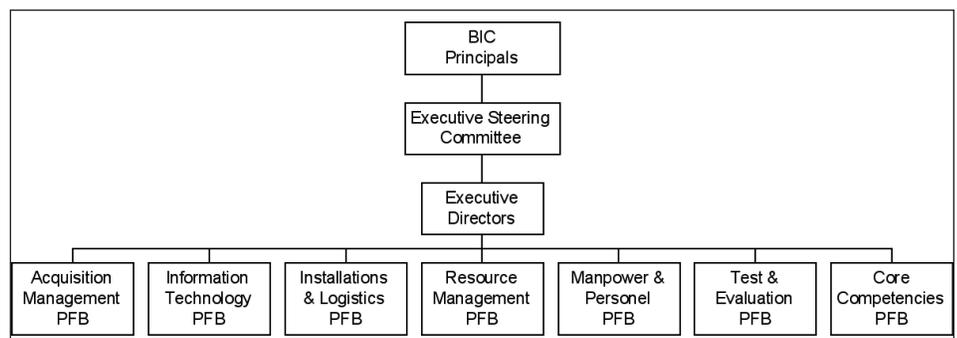
tion process. Each PFB is chaired by Military Department representatives on the same six-month rotating basis that is followed by the EDs.

Thus, at the ED level and at the PFB level, day-to-day direction is provided by the Military Departments. The EDs and PFB members have no doubt that they "own" the BIC process, and this strong sense of buy-in has been a critical element contributing to the Services' constant participation and the continuing flow of good ideas into the BIC.

### Streamlined Decision Process

When the BIC was established, the members determined that a key to success would be their ability to evaluate and reach decisions on new initiatives as expeditiously as possible. A streamlined decision process would sustain enthusiasm for the program, enable DoD to reap the benefits of new initiatives more quickly, and send a clear message that the BIC represented a new paradigm for process reform.

The diagram shows the complete BIC organizational structure. In addition to the PFBs and EDs as discussed above, the BIC



Process/Functional Boards (PFB). Each PFB is staffed with functional experts representing the BIC Principals. The PFB members evaluate initiatives in their functional areas, provide subject matter expertise to evaluate related initiatives in other functional areas, ensure their Service/agency position is presented to the PFB, and ensure their ED is kept apprised of the status of initiatives as they move through the evalua-

tion process. Each PFB is chaired by Military Department representatives on the same six-month rotating basis that is followed by the EDs. Thus, at the ED level and at the PFB level, day-to-day direction is provided by the Military Departments. The EDs and PFB members have no doubt that they "own" the BIC process, and this strong sense of buy-in has been a critical element contributing to the Services' constant participation and the continuing flow of good ideas into the BIC. When the BIC was established, the members determined that a key to success would be their ability to evaluate and reach decisions on new initiatives as expeditiously as possible. A streamlined decision process would sustain enthusiasm for the program, enable DoD to reap the benefits of new initiatives more quickly, and send a clear message that the BIC represented a new paradigm for process reform. The diagram shows the complete BIC organizational structure. In addition to the PFBs and EDs as discussed above, the BIC

(continued from previous page)

tion and staffing will recognize this as a dramatic time reduction.

**Retention of Savings**

In almost all cases, previous reform projects were expected to generate significant dollar savings, and the savings were harvested by senior headquarters for reallocation to organization-wide priorities. But in the case of the BIC, the commitment was made from the outset that the Services will retain any savings generated by BIC initiatives. Even though actual savings to date have been modest, the fact that savings will stay with the organization that produces the savings has been, and continues to be, one of the BIC's critical success factors.

When people know that they will be allowed to reap the benefits of their hard work, they are much more likely to create, propose, and implement challenging initiatives than would be the case if the savings were going to be taken away by higher headquarters.

Perhaps the most unexpected side benefit of the savings policy is that it has produced an unprecedented level of cooperation among the Services and the OSD Staff. When there is no possibility that funds will be lost, the Services no longer have a reason to compete with each other, and they find themselves working together in a spirit of genuine cooperation to identify, evaluate, and approve BIC initiatives.

**DoD Summary**

We've identified the elements of the BIC organizational structure and described the key elements of the BIC process contributing to its success. Almost without exception, the Services and OSD Staff agree that it is working far better than could have been expected, and most participants expect that the BIC effort will continue in DoD for some time.

**Army Business Initiative Council (ABIC)**

A short time after the DoD BIC was established, the Army decided to create the ABIC for two primary reasons. First, the Army leadership determined that an internal Army structure that mirrored the DoD structure would make it easier for the Army

to handle its BIC leadership responsibilities during its six-month rotations into the leadership position. Second, and more importantly, the leadership also determined that a successful BIC program requires a steady flow of initiatives into the pipeline, and that a structure and process would have to be put in place to manage this flow of initiatives.

The ABIC was established in the Spring of 2002, and the subsequent 12-15 months have proven the Army to be correct on both counts. Each time the Army has assumed or relinquished the BIC leadership role, our key players have handled the transition seamlessly. And since the ABIC was established, the Army has become a major contributor of BIC initiatives. This has been particularly true in the Resource Management PFB: in the past year, the RM Board has sent 10 initiatives to the DoD BIC EDs for consideration, and 9 of these were submitted by the Army.

The figure depicts the ABIC organizational structure. It differs from the DoD

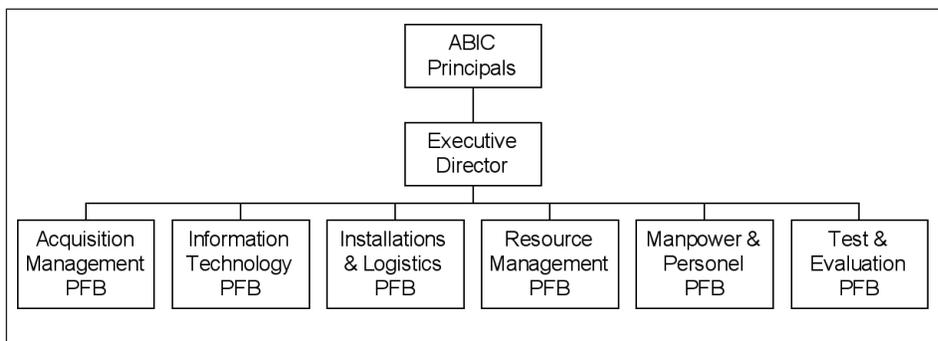
that the initiative is presented clearly and fairly, and considers comments from MACOMs and other HQDA agencies in developing a recommended action for the initiative. If an initiative has potential applicability across DoD, the responsible PFB simultaneously presents it to the DoD PFB.

Following the staffing and coordination process, all initiatives are briefed to the ABIC in a single decision meeting. The Army process is just as streamlined as the DoD process: this decision meeting occurs just six weeks from the date the initiatives were originally submitted.

**What Lies Ahead**

Some previous reform efforts were designed to produce initiatives that would have dramatic impacts on the Defense Department. But the BIC principals established a less aggressive goal for the BIC effort, setting their sights on initiatives that would have a moderate but meaningful impact.

If we were to ask the people engaged in the BIC process on a day-to-day basis —



structure in two ways:

- There is no ESC. The Army experimented with an internal ESC for a short time, but chose instead to have its three-star level executives (the Assistant Secretaries of the Army and the Deputy Chiefs of Staff) become part of the ABIC, which is chaired by the SECARMY.
- There is no Core Competencies PFB, since this function is managed at the OSD level.

The ABIC operates on a quarterly cycle. Each cycle begins with the submission of proposed initiatives by MACOMs and HQDA agencies. Each initiative is assigned to a PFB. The responsible PFB ensures

the Executive Directors and the Process/Functional Board members — to assess how well the BIC has done in identifying “medium/medium” initiatives, I believe the consensus would be that the BIC deserves high marks, both for its work to date and for its potential future contributions. I've been pleased to be a part of the BIC process for the past seven months, and I expect its good work to continue for the foreseeable future.

Donald Tison is the Deputy Director for Army Programs, HQDA, (703) 697-8232, e-mail: donald.tison@hqda.army.mil **PWD**



## Satish K. Sharma

*Chief, Utilities Branch, Facilities Policy Division, OACSIM*

**B**orn and raised in India, Satish K. Sharma did his undergraduate studies at the Indian Institute of Technology in Kharagpur, India. In 1970, he immigrated to the United States to attend Mississippi State University as a graduate student, completing a master's degree in Mechanical Engineering by 1972.

Most of the first decade of Sharma's career included jobs in the textile and paper industries in Georgia, Alabama, and Delaware as a mechanical or process engineer. With primary responsibilities in the design of new machines and automating manufacturing processes, "I did a lot of different things in those early years and learned to work with diverse groups of people at various positions in the private sector," said Sharma.

But in August 1980, Sharma's career took a different path. Now a federal employee, he joined the staff of the Facilities Engineering Support Agency of the U.S. Army Corps of Engineers as a mechanical engineer. When the organization was renamed and reorganized in 1987 as the US Army Engineering and Housing Support Center (EHSC), he was promoted to Chief of the Mechanical and Energy Division.

From 1987 to 1993, Sharma initiated and developed many programs under the energy and utilities umbrella. He supported the much needed improvement of boiler



Program projects at the U.S. Army Construction Engineering Research Laboratory (CERL).

Other programs receiving a boost under Sharma's watchful eye included the Utility Plant Operator Training and Assistance Program; underground heat energy distribution systems, and high pressure boiler safety inspection services.

In 1993, as EHSC transitioned into the U.S. Army Center for Public Works shifting their responsibility from technical hands-on work to policy making, Sharma joined the newly created Office of the Assistant Chief of Staff for Installation Management (OACSIM) as Chief of the Utilities

Branch, a position he continues to occupy today. "My goal was to better define and defend the resources for installation utility/energy systems and improve partnerships with private sector in obtaining utility services," Sharma said. And he did just that.

For the last ten years, Sharma has concentrated on executing the Army program to privatize utilities systems on installations. "We now have 78 installation utility systems privatized in the United States and 216 in Europe," Sharma continued. "I am very proud of the level of utility services that we have achieved at all of the installations where systems have been privatized. Services from the private sector have been highly reliable, efficient and in conformance with utility standards. In addition to privatizing, we've also been promoting and expanding the use of Energy Savings Performance Contracts (ESPC) and Utility Energy Services Contracts (UESC) to implement energy saving opportunities," he added.

Near-term plans (3-5 years) call for completing the privatization of utility systems. The Army will program and modernize utility systems that are to remain Army-owned. "I believe that in addition to privatization, the use of new technologies and renewable/secure energy sources at installations will meet the Army goal to provide efficient, secure and reliable utility services to soldiers, civilians and family members who work and live at installations," Sharma concluded. **PWD**

*"I am very proud of the level of utility services that we have achieved at all of the installations where systems have been privatized."*

— Satish K. Sharma

efficiency on Army installations and organized energy engineering workshops for Army energy staffs at installations in the United States and overseas. During this time, he got to know many of the Army's energy/utility

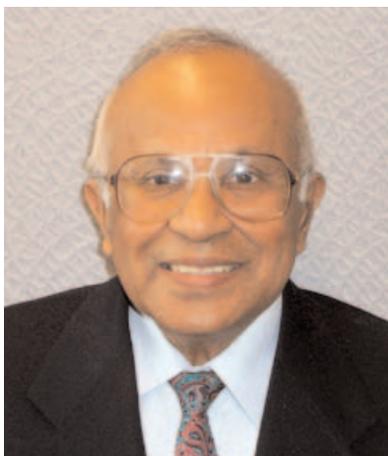
managers. Under Sharma's leadership, the Mechanical and Energy Division staff conducted numerous field assistance visits and studies in the fields of boilers, energy, bag-houses and electrostatic precipitators and performed technical monitoring for many Facilities Engineering Applications



## Muthu Kumar

*Utility and Energy Program Manager, IMA*

The Army Energy Program got a jump start 1 June 2003 when Muthu Kumar signed on as the Utility and Energy Program Manager with the Installation Management Agency (IMA). This is a new position in a new field operating agency and Kumar will be working closely with the organization's seven Regional Energy Managers on duties previously carried out by various MACOMs. He will be heavily involved in Energy Saving Performance Contracting (ESPC), the Energy Conservation Improvement Program, Utility Modernization, and Utility Privatization Army wide.



storied structures to accommodate the load resulting from the transfer of the TV Antenna mast from the Empire State Building," he reminisced. "I spent endless hours performing complex mathematical computations using the now antiquated mainframe computers, and experienced a devastating sense of both personal and professional loss when terrorists destroyed the massive buildings."

Kumar's first civil service job was in 1973 with U.S. Army Communication Command at Fort Huachuca, where he conducted the structural analysis necessary to determine the load bearing capability of communica-

tion towers at various Army installations in Germany and the Panama Canal Zone.

Adding to his international experience was a term in Japan as the Chief of Master Planning at Camp Zama, and then Chief of Engineering Plans and Services and Deputy Director of Engineering and Housing (Public Works) in Okinawa. "While in the Far East, I was involved with master planning of installations, DoD schools at Camp Zama, dredging operations at Port Naha and construction and maintenance of petroleum, oil lubricant (POL) facilities.

On his return to U.S. in 1981, Kumar worked with U.S. Army Forces Command for 20 years in various aspects of engineering and housing areas, visiting all 24 FORSCOM installations. This included a 6-month deployment with Task Force Falcon to Camp Bondsteel in Kosovo. As Deputy Director for the Directorate of Public Works, he supervised U.S. and local (Kosovo) engineers and technicians in construction work to help support American troops carrying out peacekeeping duties. "Assisting military customers in project development, preliminary design, and cost estimating while coordinating with base camp command staff, military customers, NATO officials, UN and local government officials was much more difficult," Kumar reminisced. For his valiant efforts in Kosovo, he was presented the prestigious NATO medal.

With his impressive background, education and installation experience, Kumar comes well prepared to execute the Army's Energy Program. As the senior advisor for all energy-related matters, he stands ready to help the Army meet its current and future energy goals. **PWD**

No stranger to hard work, Kumar completed his bachelor's and master's degree in Civil and Structural Engineering at Annamalai University (AU) in India. He taught graduate and undergraduate level courses in steel and concrete structures and strength of materials at AU for 2 years before coming to the U.S. in 1965, where he earned another master's degree in Civil Engineering from the University of Pennsylvania. He has a Professional Engineering license from New York State and is currently registered as a Professional Engineer with the State of Georgia.

His early experience includes work with private and public engineering firms such as United Engineers and Constructors, PA, the Port Authority of New York and New Jersey in New York City, and Howard County Public Works at Maryland, and Skilling, Helle, Christiansen, Robertson Inc. "In the early 1970s, I was part of the Structural Engineering group for the Newark Airport terminal, which designed the main terminal with hyperbolic shell and satellite buildings. We won the Civil Engineering Magazine award from the American Society of Civil Engineers," Kumar said proudly.

But Kumar's most memorable experience was working on the design and construction team for the twin towers of the World Trade Center, the tallest buildings in the world at that time. "My biggest challenge was designing the structural members of the top 20 floors of one of the 110-

*"I look forward to working with Army Installation Energy Managers worldwide."*  
— Muthu Kumar

