



U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy

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By minimizing overall costs and maximizing utility services to U.S. missions, the State Department's Utility Management Program reaches many diverse locations around the world while saving the Government money.

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... and more!

SPECIAL ISSUE: 2001 Presidential Awards for Leadership in Federal Energy Management and 2001 Federal Energy and Water Management Awards

## State Department: A Model of **Lighting Efficiency Overseas**

t the Federal Energy and Water Management Awards Ceremony on Wednesday,  $\Pi$ October 17, 2001, the Award to the State Department's Foreign Building Operations for Effective Program Implementation and Management was inadvertently left out of the presentation. The Federal Energy Management Program sincerely apologizes for this mistake and to partially reconcile for this oversight, we are highlighting the award winning project below.

The Department of State occupies approximately 12,000 properties in 280 worldwide locations. Many of these locations are in areas where utility costs are high, utility availability is uncertain, and maintenance staff is strained or non-existent. The Department of State's utility program managers, Richard Crowson and Jane Loyer, teamed up with Margaret Lewis and Michael Hoffman from the Bonneville Power Administration, and Peter Greenberg from Energy Wise Lighting (a private contractor) to provide full lighting efficiency services to eight U.S. overseas missions that would otherwise be unable to support such projects.

The lighting technology installed in each location was tailored to the needs of each mission, meshing together environmental as well as functional requirements. The lighting services provided included the identification of funds (through central maintenance funds), procurement of materials, overseas secure shipping, contracting of U.S. personnel, and proper installation of lighting and lighting control materials. Opportunities to minimize the workload of mission personnel and reduce the mission's electrical load through energy-efficient lighting are extremely important at U.S. foreign mission locations where the only source of electricity is on-site diesel generators. Lighting efficiency projects reduce costs while maximizing the function and maintenance of utility services to overseas missions.

The systematic global refitting of lighting and lighting controls is often implemented in parts of the world where the only demonstration of energy-efficient lighting technology is the U.S. Embassy. Countries with U.S. missions receiving the benefit of these lighting services include

## Second Annual Presidential Awards for Leadership in Federal Energy Management

On October 18, 2001, Vice President Dick Cheney honored the members of four Federal agency energy management teams for their exceptional efforts and leadership in promoting and improving Federal management of energy and water resources.

This is the second year the Presidential Awards for Leadership in Federal Energy Management, established by Executive Order 13123, have been presented. Winners included representatives from the National Aeronautics and Space Administration, the U.S. Postal Service, and the Department of Defense's Marine Corps and Department of the Navy. The Award recipients were recommended to the President by the Office of Management and Budget and FEMP.

The following are excerpts from the Vice President's speech:

"Today, we're presenting Presidential Awards to Energy teams from four Federal agencies who are leading by example to implement efficient energy management. In doing so, they are achieving valuable savings in both energy consumption and taxpayer dollars. The four teams we are honoring . . . are fine examples of how our Government can work better and cost less, save energy, reduce peak demand, and save money."

"The President and I recognize the importance of a comprehensive energy plan that emphasizes energy efficiency. We developed a National Energy Plan that will help ensure reliable, affordable, and environmentally sound energy for America's future. The President's Plan recognizes that we must enhance conservation through technology, modernize our infrastructure, increase our domestic energy supplies, including renewables, accelerate the protection and improvement of our environment, and increase energy security."

"This Administration is committed to more efficient energy management. In President Bush's May 3rd Memorandum to all Departments and Agencies, he stated that the Government should, '... set a good example of conservation, by reducing its own energy use, particularly in regions where electricity shortages occur and during peak electricity demand.' We've reduced the Government's energy bill by \$150 million a year in buildings alone. We've done it with off-the-shelf technologies-with thousands of energy-efficient light bulbs, occupancy sensors, ENERGY STAR® office equipment, and energy efficient windows."



Vice President Dick Cheney speaks at the second annual Presidential Awards for Leadership in Federal Energy Management.

"I'm delighted to recognize the successes of agency energy teams who have taken the President's directive to heart. The Federal Government is leading by example. I congratulate the winning teams, from NASA, the U.S. Postal Service, the Marine Corps, and the Navy. I also recognize many of our invited guests today who are working to help us achieve our goals. Numerous Federal agencies represented here today are doing their part to save energy, including the Departments of Defense, Energy, Commerce, and GSA. I thank you all."

For more information, please contact Annie Haskins of FEMP at 202-586-4536 or annie.haskins@ee.doe.gov, or visit www.eren.doe.gov/femp/ prodtech/awards/ awardsprog.html #lead\_awards.



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are taking to save money and energy at Federal facilities are making a difference. Thank you, again, for demonstrating your commitment to conserve Federal Government energy use.

– Beth Shearer

Director, Federal Energy Management Program



## Presidential Awards for Leadership in Federal Energy Management

### National Aeronautics and Space Administration (NASA) "Federal Energy Management Success"

ASA's energy team is a well-integrated group comprised of key members of the Agencylevel Energy Efficiency Board that guides the planning and implementation of energy efficiency activities. NASA's successes include:

- Energy Policy. NASA issued an Agencywide directive providing detailed procedures and guidelines for meeting the requirements and goals of Executive Order 13123, using alternative financing, and evaluating renewable energy and water conservation measures.
- Alternative Financing. Over the past 3 years, NASA has awarded or participated in eight Energy Savings Performance Contract (ESPC) delivery orders and four Utility Energy Savings Contracts (UESCs) that resulted in over \$34 million in facility energy efficiency and water conservation improvements. In FY 2000 alone, NASA used alternative financing to implement \$2.7 million in energy and water projects that are saving \$375,000 annually. In addition to saving energy and money, the projects will save 8 million gallons of water annually and remove thousands of PCB-filled lighting ballasts.
- Renewable Energy. NASA uses solar, geothermal, wind, and other renewable energy sources in innovative and cost-effective applications. A landfill gas supply contract awarded by Goddard Space Flight Center will reduce greenhouse gas emissions, enhance fuel supply reliability, and save at least \$330,000 annually in energy costs. A wind power project at Ames Research Center reduces facility maintenance costs and has a 9-year simple payback.
- Showcase Facilities. In FY 2000, NASA installed a 2,500 square foot transpired solar wall and modular condensing gas-fired boilers in the Aircraft Support Facility at NASA Dryden Flight Research Center. The project reduced air emissions to the point that expensive air permitting is no longer required.
- ENERGY STAR® Buildings. The Child Development Center at Kennedy Space Center and the Chief, Naval Meteorology and Oceanography Command Administration Facility at Stennis Space Center earned the prestigious DOE/EPA ENERGY STAR® label for Buildings.
  - Management. Energy efficiency and water conservation is an integral part of the Agency's Environmental Strategy and Functional Leadership Plan. The team's achievements are an indication of strong management support for energy efficiency.
  - Management Information Systems. NASA developed and implemented the NASA Environmental Tracking System, an electronic database for collecting, aggregating, analyzing, and reporting environmental and energy data, to aid in Agency-level reporting and functional management.
  - Awards and Recognition. The Agency has named 19 of its employees and on-site support contractors as "Energy Champions" since DOE started this recognition program in 1998. NASA will establish its own internal awards program next year.

The National Aeronautics and Space Administration used alternative financing to implement \$2.7 million in energy and water projects that are saving \$375,000 annually.



### United States Postal Service (USPS) – Southeast Area "Stamp Out Energy Waste"



The Southeast Area's Energy Steering Committee produced and implemented a Strategic Energy Management Plan that embraces many of the tools of Executive Order 13123. The results show that the Southeast Area's successful implementation of these tools has saved significant amounts of both energy and financial resources.

- Alternative Financing. The USPS has negotiated shared energy savings contracts with six utilities covering 352 Postal Service facilities. The cumulative investment in energy efficiency improvement will total more than \$21 million over the next 5 years and generate annual energy cost savings of approximately \$4 million, for a simple payback of 5 years.
- Energy Capital Improvements. The Southeast Area invested

\$375,000 of its own capital towards energy efficiency improvements, generating annual energy cost savings of \$104,000. This investment is just the start of a comprehensive program aimed at energy capital improvements in small- and medium-sized postal facilities.

Moreover, the Steering Committee has launched several of its own initiatives to increase energy efficiency. These include:

- Metering. The USPS established a database that tracks energy use and cost at the 3,800 facilities in the Southeast Area. A statistical model was developed to help the Committee use the information in the database to determine which energy programs (from awareness to capital improvements) are best suited to achieve improved energy efficiency.
- Energy Data Web Page. The page is a quick tool that energy managers can use to acquire energy usage and cost data at the facility, district, or area level.
- District Energy Action Plans. All nine districts in the Southeast Area have completed (or will soon complete) plans that identify specific energy conservation actions that will be taken over the next 5 years, the expected savings, and specific strategies for documenting and reporting results annually.
- Partnering Alliances. The Southeast Area partnered with the Florida Energy Office and a consulting firm to establish a Resource Energy Manager (REM) Pilot Project. The resulting \$100,000 grant used to hire the first REM led to overall documented savings of \$290,000 in less than a year. The USPS also utilized the expertise of DOE's SAVEnergy program and the Florida Energy Office to identify energy conservation measures requiring a \$106,000 investment, yielding cost savings of more than \$18,000 per year.
- Energy Awareness. The Southeast Area launched an energy awareness campaign with the slogan, "You Have the Power to Stamp Out Energy Waste." The program goal is to have at least half of its employees sign an energy conservation pledge card within a year. The pledge card commits employees to be good stewards of energy conservation by taking basic actions (e.g., turning off lights and computers when not in use, etc.).

The United States Postal Service – Southeast Area's investment in energy efficiency improvements will total more than \$21 million over the next 5 years and generate annual energy cost savings of approximately \$4 million.



The U.S. Marine Corps Air Station – Iwakuni, Japan, implemented an exceptional energy management program, which resulted in a savings of \$1.5 million annually in electricity charges and more than 50,000 MBTUs.

### U.S. Department of Defense, United States Marine Corps U.S. Marine Corps Air Station – Iwakuni, Japan "Energy Conservation Program 2000"

The Iwakuni Air Station implemented a comprehensive and inspiring energy management program under the leadership of James L. Trocke. They assembled a highly efficient Energy Conservation Planning Group, chaired by the Executive Officer of the Station, and a group of energy monitors throughout the Air Station. Their accomplishments include:

- Utility Rate Negotiation. The Planning Group modified and enhanced existing orders and policies governing energy programs at the Air Station and negotiated a new billing rate structure which resulted in savings of \$1.5 million annually in electricity charges and more than 50,000 MBTUs.
- "Green-out." This is an innovative, voluntary, cost-free method of shaving high peak electrical consumption demands. The Green-out program saved the Air Station from raising its contract power peak level and paying high penalty charges for exceeding it, helped reduce metered energy consumption, and elevated energy conservation awareness of all Station residents.
- Water Conservation Program. The program will result in 30 percent water savings, equating to a projected savings of \$800,000 annually.
- Steam Cycling. The energy team determined a way to cycle waste steam in buildings throughout the Station in the heating season to dramatically reduce boiler loads. It saves approximately \$340,000 a year in fuel costs.
- Energy Awareness Week. The team orchestrated a full week of Energy Awareness events at the Station, including a 10K run, school field trips, poster and essay contests, a "car jam," and a barbeque. The events which included everyone from the Base, were well attended, and had an energy conservation theme.

Other small projects implemented include:



- A proactive program to ensure that lights on the Air Station were secured every night, saving more than \$25,000 per year in electricity.
- Nighttime inspections to identify unneeded street and parking lot lights. More than 40 unnecessary lights were found and secured saving about \$6,000 per year in electricity costs.
- A water conservation initiative to reduce water pressure in housing, saving approximately \$25,000 annually.
- Replacement of lighting with energy-efficient compact fluorescent lighting, saving \$10,000 per year in electricity costs.
- A program to reduce the temperature in all hot water heaters, saving about 50,000 gallons of heating fuel per year.

### U.S. Department of Defense, Department of the Navy – Southwest Region "Demand-Side Management"



The Navy Region Southwest's (NRSW's) demand-side management initiatives spearheaded by NRSW's Regional Energy Program Office helped avert Stage 3 alerts and regional rolling outages. Navy Region Southwest (NRSW) formed a Regional Energy Program Office (REPO) in response to spiraling electricity prices and electricity shortages in Southern California. The demand-side management initiatives spearheaded by the REPO helped the local utility avert Stage 3 alerts and regional rolling outages.

- Utility Demand Reduction. This program to reduce both peak-load and base-load demand for electricity resulted in savings of \$1 million and 5 million kilowatthours in just 3 months at the three NRSW bases in San Diego. Several NRSW bases reduced base-load demand by 12 to 18 percent.
- ESPCs and Demand-Side Management (DSM) Projects. An investment of \$21 million is expected to yield

\$4.5 million in annual savings. An additional investment of approximately \$35 million is expected to save \$11 million. The largest projects include everything from cogeneration plants to photovoltaic and microturbine systems.

- Renewable Energy. A 21.6 kilowatt photovoltaic (PV) system is being constructed in partnership with the local utility, the State of California, and private sector companies. The system will produce 39,420 kilowatthours annually. More importantly, it will cut demand by more than 20 kilowatts during mid-afternoon, when the local utility grid is struggling with peak usage. An additional benefit of the PV system is reduced emissions, which over its 20-year life will include: 1,111,644 lbs. of carbon dioxide, 9,461 lbs. of sulfur dioxide, and 3,942 lbs. of nitrous oxide.
- Management and Teamwork. REPO broadcasted daily energy updates and coordinated weekly electricity action meetings and several "Electricity Summits." Eleven energy specialists were deployed to identify large consumers of energy in the NRSW. Load reduction measures (e.g., banning air conditioning, directing that office equipment be turned off at night) were issued from the highest level personnel in NRSW. Weekly load profiles were issued for each base. During severe electricity shortages, there was constant contact among the NRSW, DOE, and the California Energy Commission.
- Metering. REPO adopted MVWeb, a web-based demand management system, to help identify activities and areas of high electricity usage. In several instances, usage spikes or other anomalies were traced to wasteful practices, which were modified or terminated.
- Resource Efficiency Management (REM) Program. The REM program establishes a position for a full-time, dedicated energy manager. Through energy cost savings and utility incentives, the program offers returns far above program costs.
- Awards. NRSW developed and implemented its own awards program to award top performers in effective energy management.



## 2001 Federal Energy and Water Management Awards

### Pursuing Federal Energy Efficiency

More than ever before, our energy future depends on our own energy independence and the energetic commitment of individuals within Government to achieve a brilliant future. America can no longer rely on foreign sources to fuel our country's growing energy needs. Thoughtful use of energy resources is important, not only to meet agency goals, but because energy efficiency helps improve air quality. Sound facility management offers huge savings that affect the agency's bottom line, the environment, and the workplace.

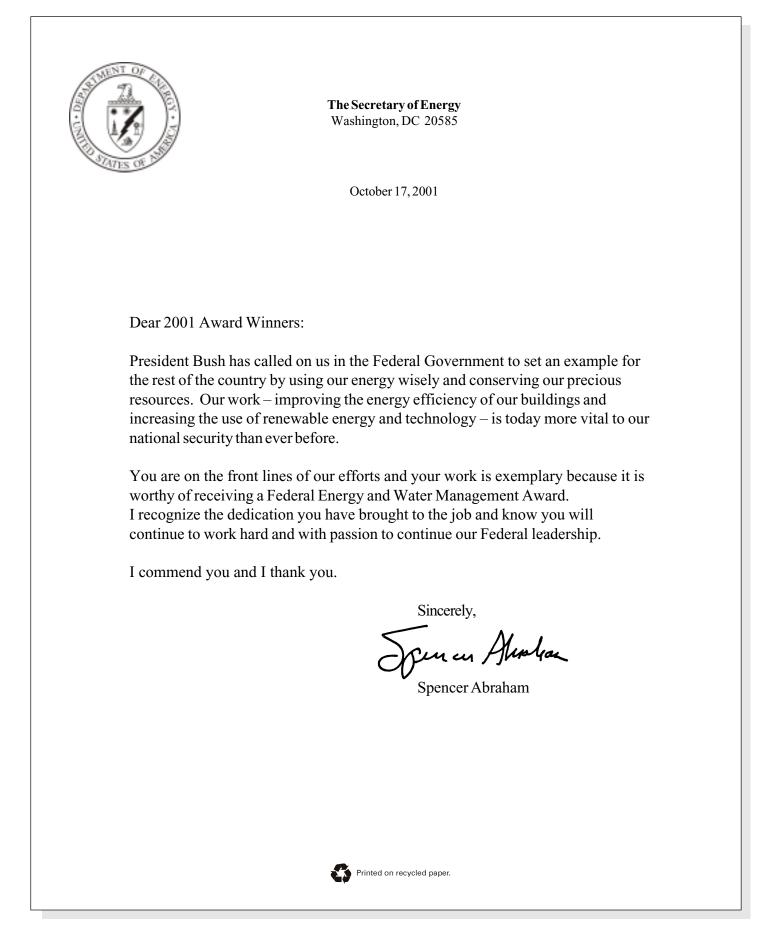
The success of the Federal Government in reducing its energy consumption and related environmental impacts, and in large measure the example that it sets which will be the key in terms of energy efficiency gain in the private sector, rests squarely on the shoulders of the individual energy champions that have led, as individuals or teams, their agencies into a brighter energy future.

This leadership often entails overcoming one challenge after another as they pioneer a path that requires complex solutions, new and highly integrated processes, and exceptional team work across organizations. Hard work, innovation, persistence and vision are characteristic of those who pursue energy efficiency. That is why the Department of Energy, Federal Energy Management Program (FEMP) is proud to salute the winners of the 2001 Federal Energy and Water Management Award.



FEMP Director Beth Shearer addresses the audience at the 2001 Federal Energy and Water Management Awards ceremony.

The 2001 winners represent the kind of 21st century thinking that will help achieve widespread Federal energy efficiency. In one year, the winners, through a combination of public and private partnerships, saved more than \$33.4 million and 2.7 trillion Btu by actively identifying and implementing energy efficiency, water conservation, and renewable energy projects. Through their dedication, hard work, ingenuity, and success, the award winners have also inspired others to increase their own efforts to save energy and water and to more aggressively pursue the use of renewable energy sources. The Federal Energy and Water Management Awards recognize the winners' contributions and ability to inspire others to take action. Please read about these individuals, small groups, and organizations in the following pages. The award winners are the Government's energy champions and FEMP is grateful for their pursuit of excellence in facility management. Congratulations to each winner and thanks to each private sector partner.



### WATER MANAGEMENT AWARDS TO ORGANIZATIONS

NAVSEA Keyport, Undersea Warfare Center Division Department of the Navy Keyport, Washington 360-396-5170

The NAVSEA Keyport, Undersea Warfare Center Division developed and implemented an innovative water-wise landscaping program that is beautifying the Base and saved \$50,000 and 200,000 to 400,000 gallons of water during FY 2000. The program provides high visibility for water conservation near the main entrance, to base personnel and residents of Kitsap County and Western Washington. The success of the Keyport Innovative Landscaping Program is due entirely to extraordinary teamwork-an effort that has helped solidify the local community as well. Numerous organizations lent their support, including a landscape architecture class from a local community college that developed a detailed design package using indigenous plants and ground cover. The manpower for the project was provided by the Navy Transfer Personnel Unit (TPU) from Bangor Base. The TPU refurbished curbside and wooden planters, cleaned storm drains, removed unwanted vegetation and debris, planted shore pines, cleared and rehabilitated the nature trail, and reestablished the wetlands by planting native grasses and trees. Initially the project saved approximately \$50,000 annually in grounds maintenance costs. Subsequently, during a two-year period, the grounds maintenance contract was reduced by more than \$70,000.

NAVSEA Crane, Surface Warfare Center Division Department of the Navy Crane, Indiana 821-854-3675 The NAVSEA Crane, Surface Warfare Center Division utilized innovative thinking in developing the Indiana Water Conservation Project. Previously, Crane's 175-mile water distribution system was antiquated and springing leaks that sent water bills soaring. This forced the Base to rethink its water operations, from production and distribution to end use. One innovative idea that arose from this creative process and that has proven effective was to use scuba divers to clean water towers instead of draining the towers. This change alone saved 1.8 million gallons of water. Crane modernized the water production plant, improving its efficiency and effectiveness. This effort is saving 20 million gallons of water per year. The water consumption crisis in Crane's distribution system drove Crane to seek ways to improve the system through monitoring and analysis. As a result, Crane removed 26 miles of obsolete leaking piping in the water distribution system. In addition, they repaired the leaky swimming pool, saving 1.6 million gallons of water. By reexamining all operations, they were able to devise improvements that are saving \$90,000 a year and approximately 88 million gallons of water, representing a 30 percent reduction for the Division.

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## **STATE DEPARTMENT: A MODEL OF LIGHTING EFFICIENCY OVERSEAS** (continued from page 1)

Singapore, Mongolia, Vietnam, Colombia, Cuba, and the Republic of Georgia. The significance of introducing cleaner technologies into these environments is great as many of these locations have limited options for disposal of hazardous materials.

By minimizing overall costs and maximizing utility services to U.S. missions, the State Department's Utility Management Program reaches many diverse locations around the world while saving the Government money. In FY 2000 the program saved \$188,365 and more than 5 billion Btu.

For more information, please contact Jane Loyer of the State Department at 703-812-2248 or loyerjm@state.gov.



Michael Hoffman



Margaret Lewis

Fort Carson Department of the Army Fort Carson, Colorado 719-526-1730 Fort Carson, Colorado, maintains a comprehensive water conservation program consisting of sound environmental management, special projects, outreach, and education to protect and conserve water resources. Water-saving projects at Fort Carson include centralizing its vehicle wash facility, using wastewater to irrigate its 180-acre golf course, installing composting toilets that are almost waterless, practicing beneficial landscaping, and more. Through these projects, Fort Carson reduced its water-use 17 percent between 1989 and 2000, saving the Post more than \$1.8 million per year in avoided water and wastewater treatment costs. Total water savings are in excess of 580 million gallons per year. Most notable about the reduction in water use is that it occurred while troop strength essentially remained the same and a sizable increase in water use for irrigation took place. Thus, water use and reuse at Fort Carson is a carefully thought out and orchestrated effort.

## MOBILITY ENERGY EFFICIENCY AWARDS TO ORGANIZATIONS

USS ESSEX Department of the Navy 808-653-3330 Innovative thinking and creative strategies have characterized the USS ESSEX's energy awareness and conservation plans. Energy training and awareness extends to all Marines on the ship and is integrated into every level of planning and operations by the Energy Conservation Board. Non-traditional anchoring plans and maintenance strategies have generated large energy savings. While at anchor in auxiliary steaming status, fuel savings of 23 percent are achieved. The USS ESSEX also switched to a single boiler plant mode of operation, which is now 24 percent more efficient than operating two boilers throughout the majority of its speed range. These efforts have resulted in savings of 225,000 gallons of fuel and more than \$135,000 during FY 2000. These energy savings were attained despite the high operational tempo of a ship such as ESSEX, laying to rest the belief that energy conservation and real-world military taskings are mutually exclusive.

Fleet Logistics Support Squadron 57 Department of the Navy San Diego, California 619-545-6916 Through careful planning, heightened awareness, training, and a commitment to sound energy management practices, Fleet Logistics Support Squadron 57 (VR-57) saved more than \$830,000 in energy costs during FY 2000. A 23-percent reduction in fuel consumption was achieved by carefully tailoring fuel loads to the minimum necessary to meet individual mission requirements, using computerized flight planning programs to determine optimum performance, and implementing strict maintenance inspection schedules, among other strategies. By operating more efficiently and reducing flight hours, VR-57 has been able to meet all operational commitments while achieving impressive energy savings.

## MOBILITY ENERGY EFFICIENCY AWARDS TO SMALL GROUPS

1 st Lieutenant Stacy Clark Gunnery Sergeant Michael McGill Marine Corps Air Station Yuma Arizona United States Marine Corps Yuma, Arizona 520-269-2316 The Motor Transport Department at the Marine Corps Air Station initiated several steps to save energy while maintaining sound operational efficiency. A strategy was devised to acquire vehicles with substantially higher fuel economy, procure alternate-fueled vehicles, terminate under-utilized vehicles, and assign vehicles to multi-tasking duties. Forty-four gasoline vehicles were replaced with electric vehicles, resulting in a cost avoidance of more than \$4,400. Bio-fueled vehicles now comprise 75 percent of the new vehicle procurements, and the Department is working with the City of Yuma to locate a compressed natural gas refueling station in Yuma. Total cost avoidance during FY 2000 resulting from these comprehensive efforts was \$112,682.



(I to r): Michael McGill, Stacy Clark

### **ALTERNATIVE FINANCING AWARDS TO ORGANIZATIONS**

XVIII ABN Corps and Fort Bragg Department of the Army Fort Bragg, North Carolina 910-432-5093 Fort Bragg embarked on an ESPC program in February 1998, by conducting a detailed selection process to choose an energy savings contractor (ESCO). Honeywell was selected and the first proposal was submitted in October 1997. The project aimed to reduce energy use, lower costs, reduce environmental emissions, and improve the quality of life for the soldiers, dependants, and employees of Fort Bragg. For FY 2000, Fort Bragg saved more than \$5 million and almost 150 billion Btu as a result of the ESPC program. The cost reduction will generate close to \$98 million in savings over the term of the ESPC program. Nearly \$94 million of those savings are being reinvested into Fort Bragg's facilities and infrastructure.

Naval Training Center Great Lakes Department of the Navy Great Lakes, Illinois 847-688-4211 Naval Training Center (NTC) Great Lakes, Illinois, is undertaking a ten-phase multiyear, multi-million dollar Base-wide program to identify and implement energy conservation opportunities. This demand-side management project with Commonwealth Edison (ComEd), the local electrical utility, uses ComEd's expertise and capital to perform and finance initiatives that would otherwise likely not be considered. The project is being accomplished in phases. Each phase covers approximately 20 buildings. ComEd made \$14.6 million in energy improvements at the Center during 2000, resulting in savings of \$2.1 million and more than 107 billion Btu per year. Three additional phases costing \$21 million, that will save an estimated \$2.4 million per year, were developed during 2000, with construction and installation scheduled for 2001.

Naval Support Activity Mid-South Department of the Navy Millington, Tennessee 901-874-5907 In its continuing effort to meet high energy performance standards, Naval Support Activity Mid-South entered into a basic ordering agreement project containing three energy conservation measures: 1) Replacing the central steam plant; 2) Installing an energy management control system; and 3) Performing a lighting retrofit. The central steam plant replacement included the installation of high efficiency hot water boilers, high efficiency domestic hot water heaters, and natural gas-fired unit heaters in the 55 buildings served by the central steam plant. An energy management system and commissioning effort included installation of native BACnet Direct Digital Controls in 38 individual buildings, and connection of controls via a fiberoptic LAN network station. The system utilizes intelligent distributed control modules located in each building and factors in occupancy schedules as well as night set back, demand limiting, and chiller optimization. The project also included lighting retrofits of all existing F40 fluorescent lamps, all magnetic ballasts, all incandescent lamps, and exit lights located in the interior of the buildings with new energy-efficient lamps and ballasts. This \$13.2 million project is saving \$1.7 million and 286 billion Btu per year.

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## **ALTERNATIVE FINANCING AWARDS TO SMALL GROUPS**

Jose Cao-Garcia Richard H. Crowson Brian J. McCarthy Nathaniel James Pines Hilario L. Silverio U.S. Embassy Seoul Geothermal ESPC Department of State Seoul, Korea 703-875-5740 The Department of State is the first to advance FEMP's Super Geothermal Heat Exchange ESPC internationally with a project at the U.S. Embassy Seoul, Korea. Geothermal heat exchangers will replace inefficient oil furnaces and window air conditioners in 157 housing units and the Ambassador's residence. The \$5.1 million contract will span 19 years with total cost savings of \$12 million and energy savings of 568 billion Btu. The units will provide a cleaner, healthier, environment for U.S. Embassy personnel living in these residences. This project sets an example of the best in U.S. environmental technology and alternative financing.

Reza M. Jafari Farhad Memarzadeh Jeffrey Robbins Ken Roman John Vilgos NIH Bethesda Campus Cogeneration Facility National Institutes of Health Department of Health and Human Services Bethesda, Maryland 301-435-8746 The National Institutes of Health (NIH) is installing a 23-megawatt cogeneration power plant at its facility in Bethesda, Maryland. The power plant will be one of the largest ever built for the Federal Government, saving more than 640 billion Btu and approximately \$3.6 million per year. In addition, the plant will reduce greenhouse gas emissions by roughly 100,000 tons per year and other pollutant emissions and particulate matter by close to 600 tons per year. The project cost is approximately \$30 million and will be financed by Pepco Services and will be paid through energy savings from the project.



(l to r): John Vilgos, Reza Jafari

Harry K. Atkins Perry L. Boeschen Suvit S. Boyd Chuck Korytowski Tony Pensick Lincoln Energy Conservation Project General Services Administration, Region 6 Kansas City, Missouri 816-823-2273

The Lincoln Energy Conservation Project was the first project completed with the Department of Energy's Super ESPC contract by the General Services Administration (GSA) Region 6. Using \$3.78 million in funding earmarked for replacement of CFC containing chillers and installing an energy management system, the Lincoln Team took a "whole building approach" to complete the project. The \$4.4 million contract includes replacing the CFC chillers, installing a building-wide direct digital control system for energy management, converting multi-zone air handling systems to variable air volume, retrofitting light fixtures, replacing steam traps, retrofitting the controls of the boilers, and installing water conserving plumbing fixtures. In order to complete all of the required work, GSA borrowed more than \$300,000. Reductions of \$119,966 and 23.7 million Btu of annual savings for the building have been realized. The project's annual savings are guaranteed and the loan will be paid off in only 5 years.

Charles Evans Stan Hall Paul Pimentel, PE Floria Standifer Timothy Wisner Atlanta Energy Performance Contract General Services Administration Atlanta, Georgia 404-331-6417 The Atlanta Energy Performance Contract is a DOE Super ESPC energy project incorporating the major Federal facilities of the General Services Administration's (GSA) Atlanta Property Management Center. The project demonstrates exceptional entrepreneurial drive in achieving the energy reduction requirements of Executive Order 13123. Following the Environmental Protection Agency's (EPA) ENERGY STAR® Building methodologies, the project resulted in phenomenal energy savings – more than 30 billion Btu annually – enough to power 990 homes for 1 year. The project has received national recognition by attaining both the DOE Federal Energy Saver Showcase designation and the EPA ENERGY STAR® Building certification for the Richard B. Russell Federal Building.



Paul Pimentel







Floria Standifer



Stan Hall



Charles Evans

## **ALTERNATIVE FINANCING AWARDS TO INDIVIDUALS**

Cathe A. Grosshandler United States Postal Service Anchorage, Alaska 907-564-2902



Cathe Grosshandler used innovative and creative alternative financing strategies to implement a demonstration project that saved the United States Postal Service (USPS) Anchorage General Mail Facility (GMF) more than \$1 million. During the initial investigation, the USPS GMF was discovered to have a backup generator with a diesel underground storage tank that would not meet the 1998 EPA underground storage tank regulations. While looking into tank replacement options, Ms. Grosshandler discovered that a recent facility expansion had created some load problems, inspiring her to implement an alternative energy project. The project provides "green" power to the 300,000 square foot facility and is able to prevent the interruption of mail processing operations caused by power grid outages. Ms. Grosshandler's innovative efforts and perseverance brought this project to fruition.

## **RENEWABLE ENERGY AWARDS TO ORGANIZATIONS**

Navy Region Hawaii Department of the Navy Honolulu, Hawaii 808-474-1874 The Department of the Navy in Hawaii is transforming the market for solar water heating systems in the United States. Taking advantage of incentives offered by the local electric utility company, Hawaiian Electric Company (HECO), the Navy installed approximately 2,000 solar water heating systems on Navy housing units by the end of 2000 which is just the beginning. Additional solar energy systems are already under construction during 2001 and planned for during 2002 on Navy and Marine Corps Bases in Hawaii. In fact, the Navy's goal is to install solar panels in as many new housing projects as possible. Nearly all of the hot water requirements for these units will be from solar energy, and each system is sized to provide a minimum of 90 percent of the hot water heating requirements. The Navy installed 1,703 solar water heating systems through 2000 at a cost of \$ 1.8 million to the Navy, after HECO paid nearly \$2.25 million in rebates, saving 14.5 billion Btu and \$400,000 annually.

Metcalfe Solar Working Group General Services Administration, Environmental Protection Agency, Department of Energy Chicago, Illinois 312-353-2476 The General Services Administration (GSA), Environmental Protection Agency (EPA), and the Department of Energy (DOE) formed a multi-agency team to implement a 10 kilowatt solar photovoltaic system for the Ralph H. Metcalfe Building, EPA Region 5 Headquarters in Chicago, Illinois. The team developed and implemented a photovoltaic (PV) solar cell system that demonstrates a non-polluting, renewable energy approach for generating supplemental electricity for building operations. The photovoltaic system, which consists of 84 panels, will reduce carbon dioxide emissions by more than 20,000 lbs per year, equal to the emissions produced from driving an average passenger car 25,117 miles—or once around the world. In addition, an interactive kiosk system that displays the actual energy production of the PV panels is located in the Metcalfe Building lobby. Funded by DOE, this kiosk will be expanded to educate the general public about the benefits of the PV system and will also include segments on other types of renewable energy. This Federal partnership is on the forefront of sustainable building design. The electricity generated from renewable energy offsets more than 61 million Btu yearly.



(I to r): Sharon Gill, DOE, Audie Washington, EPA, Kay Hudson, EPA, Hedrick Partee, EPA, Jeff Mornar, GSA, Julie Magee, EPA, Julie Berthold, GSA. Not pictured: Jane Rath, GSA, Tom Davis, GSA, Brian Olsen, DOE.

## **RENEWABLE ENERGY AWARDS TO SMALL GROUPS**

Patrick Dawson Steve White National Capitol Region General Services Administration Washington, DC 202-708-9010



(I to r): Steve White, Patrick Dawson.

The General Services Administration's National Capital Region (GSA/NCR) has installed a 100-kilowatt photovoltaic power system at the Suitland Federal Center in Suitland, Maryland. It has been operational since the fall of 2000. This facility showcases renewable energy technology in the National Capital Region. Coordinated through GSA/NCR's Maintenance and Energy Branch, the project was funded by the GSA National Energy Center of Expertise. The largest installation to date in the Million Solar Roofs Initiative, this highly visible demonstration project serves as a working model for future photovoltaic installations. It reduces the Suitland Federal Center's conventional energy needs and offsets production of air pollutants and greenhouse gases. An on- site educational kiosk describes the plant's operation and provides current corresponding emissions reductions. Tours will be conducted for students, business leaders, community activists and elected officials. The Photovoltaic Demonstration Project at the Suitland Federal Center is saving more than 528 million Btu and \$58,000 per year.

Rhonda Brooks Kent Bullard Keith Duran Channel Islands National Park National Park Service Department of the Interior Ventura, California 805-685-5745 The Channel Islands National Park research vessel, Pacific Ranger, underwent a greening project that reduces its environmental impact while operating in sensitive marine areas. For the past 20 years, the vessel has regularly served as the Park research platform and has consumed more than 185,000 gallons of petroleum diesel fuel. Changes made to eliminate further petroleum diesel fuel consumption include utilizing re-refined motor oils and a "Purafiner" filter system, using battery storage and AC inverters instead of generators, installing a "Bulbous Bow" that reduces friction in the water, and operating the vessel on 100 percent biodiesel fuel. The overall impacts of this conservation project reduced the annual fuel consumption of the Pacific Ranger by 24 percent. Annually, this project has eliminated the use of more than 10,000 gallons of petroleum diesel fuel. The project reduced demand on petroleum resources, decreased exhaust emissions, demonstrated alternative fuels in marine service, and made the Pacific Ranger petroleum free.

## **ENERGY EFFICIENCY/ENERGY MANAGEMENT AWARDS TO ORGANIZATIONS**

Navy Region Southwest Department of the Navy San Diego, California 619-556-9166 Navy Region Southwest (NRSW) played a major role in helping its local utility avoid outages during last summer's energy crisis in California. Innovative and far-reaching demand-side initiatives accounted for the success of their efforts. By adopting new practices, NRSW helped avert Stage 3 alerts and regional rolling outages. New practices include implementing a Resource Efficiency Management program to demonstrate innovative methods of optimizing business practices while reducing costs and enhancing facility operations. New technologies are also being presented such as MVWeb, a web-based demand management system that identifies electricity anomalies and demand reduction opportunities. NRSW also used distributed generation, including photovoltaics and microturbines as a part of their strategy. These practices have resulted in a savings of 58 billion Btu and approximately \$1 million for FY 2000.

Pacific Northwest National Laboratory Department of Energy Richland, Washington 509-372-2680 Pacific Northwest National Laboratory (PNNL) has 3,500 staff in 2 million square feet of building space. In March 2000, PNNL initiated a campaign to recommission its buildings and restructure building operations to run more effectively, efficiently, and environmentally. Energy saving strategies included fine-tuning the HVAC system, adjusting temperatures, and implementing more night setbacks. Savings from this no-cost campaign were 23 billion Btu of energy - 61,632 therms of natural gas, and 5 million kilowatthours of electricity - compared with energy consumption for March through December 2000. PNNL thus avoided more than \$180,000 in expected energy costs.

NAVSEA Carderock, Surface Warfare Center Division Department of the Navy Bethesda, Maryland 301-227-1162 The NAVSEA Carderock Surface Warfare Center Division had a successful year in 2000, reaping the benefits of its energy efficiency measures by reducing energy consumption by more than 37 billion Btu and saving more than \$470,000. After replacing a steam heating system with a gas-fired package boiler, and achieving a cost avoidance of nearly \$500,000, they turned to automatic controls to wring out further savings. In 2000, Carderock replaced its 15-year-old Energy Management Control System with state-of-the-art Direct Digital Control systems in 13 buildings. Carderock also completely renovated restroom facilities in three buildings, replacing and reducing the number of fixtures on site. All replacement fixtures are water-efficient and employ state-of-the-art electronic controls. Lights and exhaust fans in the renovated facilities are also automatically controlled using motion-sensing technology. Carderock is also attempting to decrease consumption of petroleum energy sources by using propane and electric ground transportation vehicles, and is promoting alternative transportation among employees to further reduce emissions.

Radford Army Ammunition Plant Department of the Army Radford, Virginia 540-639-7162 The Radford Army Ammunition Plant is actively pursuing energy conservation through the implementation of energy projects and energy conservation awareness. The decrease in energy consumed resulted in fuel savings of more than \$350,000 and 230 billion Btu. These savings were due primarily to the continued emphasis on low cost/no cost energy conservation initiatives and increased Nitrocotton/Nitrocellulose production, which reduced the magnitude of steam line losses as a percentage of total plant steam. Projects included installing an oxygen trim for powerhouse boilers, reducing reactive power charges from American Electric Power, and varying steam turbine extraction pressures. Increasing plant energy conservation awareness and implementing energy conservation projects also contributed to savings at the Plant.

U.S. Army Europe 6th Area Support Group Department of the Army Stuttgart, Germany 0711-729-6126 During FY 2000, the U.S. Army Europe's 6th Area Support Group (ASG) continued its successful energy program through implementation of numerous energy and water management projects, energy audits, and an active energy awareness program that has reduced energy intensity by 8 percent versus FY 1999 levels. The energy reductions translate to cost avoidance and savings of more than \$1 million. During FY 2000, the 6th ASG invested and implemented \$450,000 in energy conservation projects. A major effort included retrofitting more than 80,000 exit signs throughout 80 buildings with new Light Emitting Diodes, installing approximately 400 motion sensors in 40 buildings to turn off lights during unoccupied hours, and using photo cells to control outside lighting. Total energy savings for the 6th ASG is more than 96 billion Btu.

Holston Army Ammunition Plant Department of the Army Kingsport, Tennessee 423-578-6241 For FY 2000, Holston's energy usage decreased by 1.7 percent, resulting in a coal and electricity cost reduction of 5.4 percent and 4.4 percent, respectively, from FY 1999 levels. This reduction is more significant when considering that no coal was produced in FY 1999 but 2.5 million lbs of coal were produced during FY 2000. Energy saving measures included low cost/no cost maintenance efforts such as peak demand shaving, steam trap maintenance, and reduction of steam pressure. Projects at the plant such as the modernization of the Explosive Plant also contributed to energy reduction. Energy conservation initiatives implemented during FY 2000 that contributed to Holston's energy performance were estimated to have reduced the Plant's energy usage by more than 72.2 billion Btu and energy costs by more than \$1 million.

## ENERGY EFFICIENCY/ENERGY MANAGEMENT AWARDS TO SMALL GROUPS

Jim Bertrand Lieutenant Tammy Gray Charles Guess Kelly Jordan Ron Trepanier 17th Training Wing United States Air Force Goodfellow Air Force Base, Texas 915-654-3796 In order to meet and exceed the Federally mandated energy reduction goals set forth in Executive Order 13123, the 17th Training Wing Energy Team continually strives to find new ways to improve energy conservation throughout Goodfellow Air Force Base. The Energy Team manages all areas of conservation from energy management to HVAC improvements. Together, the Team made Goodfellow AFB a leader in energy awareness and conservation. During FY 2000, the Energy Team implemented a \$3 million ESPC with the Army Corps of Engineers. Nine new energy saving HVAC projects, extensive updates and improvements to the Energy Management Control System and a highly visible energy awareness program contributed to savings of more than 25 billion Btu and \$246,000 per year for the Base.



(I to r): Ron Trepanier, Lt. Tammy Gray, Charles Guess (back), Jim Bertrand, Kelly Jordan.

James Crockett Ron Judkoff Larry Kilborn Patrick Shea Paul Torcellini, PE, Ph.D. Department of the Interior National Park Service, National Renewable Energy Laboratory Golden, Colorado 303-384-7520 The Zion National Park Visitor Center design process was a collaborative effort between the National Park Service's Denver Service Center and the Department of Energy's National Renewable Energy Laboratory (NREL). Team members from NREL's Buildings and Thermal Systems Center provided technical support to optimize the energy performance of the building. The Denver Service Center developed the architectural design with input from NREL about the energy implications of design decisions. This "whole-building systems integration" process started in pre-design and continued through to commissioning occupancy. The process resulted in a building that uses 66 percent less energy than code, and is virtually immune to the frequent power outages in the region. The project represents a



(I to r): Larry Kilborn, NPS, James Crockett, NPS, Paul Torcellini, NREL, Patrick Shea, NPS, Ron Judkoff, NREL.

synthesis of passive heating, cooling and daylighting, energy efficiency, and photovoltaic technology. Shading, natural ventilation, passive evaporative cool-towers, clerestories, trombe walls, direct solar gain, thermal mass, high efficiency lights, and 7 kilowatts of photovoltaics all work together to nearly eliminate loads. The project resulted in cost savings of more than \$10,000 and 309 million Btu in site energy and 1 billion Btu in source energy.

## INNOVATIVE/NEW TECHNOLOGY AWARDS TO ORGANIZATIONS

European-Mediterranean (Euro-Med) ESPC The Department of the Navy Euro-Med Acquisition Team designed an ESPC in a Department of the Navy record 6 months and 11 days from requirement identification to contract and first Port Hueneme, California project award. Not only was the speed of the ESPC development impressive, but it 805-982-2740 was done while meeting the special needs of seven separate foreign countries and was accomplished by team members spread across nine time zones. The Navy will avoid \$1.3 million in annual energy-related costs and 185 billion Btu due to the implementation of energy conservation measures 1 year in advance of previous lead times. The Navy accomplished the energy reductions by effectively integrating the technical requirements of performance contracting and the streamlined processes of fast track source selection. Projects at Naval Air Station Sigonella (Italy), Naval Air Station Rota (Spain), and Naval Activities United Kingdom are in progress as of December 2000 and would not have been contemplated if the acquisitionstreamlining procedures had not been implemented. Naval Base Ventura County One of two Naval facilities designated as a Federal Energy Saver Showcase, Building Department of the Navy 850 at Naval Base Ventura County has been designed to fully demonstrate state-of-Point Mugu, California the-art technologies. The building is designed to make use of 100 percent natural 805-989-0797 daylighting and has zero net energy usage from the electric utility. Sustainable building design technologies and products are incorporated throughout the building, and its renewable energy technologies include a 31 kilovolt-ampere photovoltaic (PV) array and a solar water heating system. Excess power not used by Building 850 is routed to the electrical grid for use by other Base requirements. The PV system also provides non-interruptible power to computers, lighting, ventilation, and control systems. While the energy savings are substantial in Building 850, even greater value will be realized through the replication and the adoption of the building's cutting-edge technologies by other public and private sector organizations. The new Cusano Environmental Education Center at the John Heinz National Wildlife The John Heinz National Wildlife Refuge at Tinicum Refuge in Tinicum, Pennsylvania, is a model for the conservation and efficient use of Fish and Wildlife Service energy and water. The Center incorporates geothermal heating and cooling, energyefficient lighting, a well-insulated building envelope, and natural daylighting to reduce Department of the Interior Philadelphia, Pennsylvania building energy consumption. Other sustainable design strategies include use of green 610-521-0662 building materials with significant recycled content. The geothermal heating and cooling system alone is estimated to save approximately 25 percent of the energy compared to a conventional system. In addition, the Center has implemented an innovative on-site "marsh machine," an organic wastewater treatment plant. Estimated

than 119 million Btu for FY 2000.

savings for the project include \$3,850 for the geothermal heat pump alone and more

## INNOVATIVE/NEW TECHNOLOGY AWARDS TO SMALL GROUPS

Patrina Eiffert Nate Eisenpress Kendall Kam Stephen Meder Art Seki Ford Island Boathouse Building Integrated PV System Department of the Navy Pearl Harbor, Hawaii 808-471-8559 A partnership between the Commander Navy Region Hawaii; Pacific Division, Naval Facilities Engineering Command; Hawaiian Electric Company; the National Renewable Energy Laboratory; and, the University of Hawaii, resulted in the installation of a 2.8 kilowatt building-integrated photovoltaic (PV) roof system on the Ford Island boathouse in Pearl Harbor. This demonstration project generates nearly 3 kilowatts of electricity under full sun from a series of PV modules imbedded into the roofing material of the boathouse. The system generates nearly 5,000 kilowatt - hours per year, producing an annual savings of approximately \$500. The project is helping the Navy to evaluate the potential use of PV systems integrated with building materials to help meet electricity requirements, and its use as an emission reduction strategy. The system is estimated to save more than 16.6 million Btu per year.

Jerard Butler Barbara McPhelim Ken Shutika Don Stiteler Aggregate Power Procurement Team General Services Administration -Mid-Atlantic Region Philadelphia, Pennsylvania 215-656-5692 The General Services Administration (GSA) Mid-Atlantic Region combined the electric requirements of six of their sites with the electric requirements of two non-GSA accounts and went looking to buy with the combined requirement of 3 million kilowatthours of renewable electricity. The innovative aggregate power purchase approach resulted in an account large enough to entice very competitive pricing. The method allowed GSA to purchase 100 percent renewable power from 100 percent renewable resources with little or no price premium versus long-term regulated rates. The GSA purchased Green-E certified biomass electricity. The contract was GSA's first procurement for renewable power in Pennsylvania.

## EFFECTIVE PROGRAM IMPLEMENTATION AND MANAGEMENT AWARDS TO ORGANIZATIONS

NAVSEA Crane, Surface Warfare Center Division Department of Navy Crane, Indiana 821-854-3675

The NAVSEA Crane, Surface Warfare Center Division in Crane, Indiana, targeted the improvement of the Center's heating and air conditioning systems. After pinpointing high energy-consuming buildings through analysis of utility bills, Crane enlisted the support of its 96 Building Energy Monitors and Public Works Inspectors to perform building envelope surveys, and identify and correct cold air infiltration and areas of heat loss. The result was a solid success with a 21 percent reduction in Btu during winter months and a major steam trap repair effort which saved 10 million Btu and \$68,000 per year. Crane also repaired steam leaks, saving \$37,901. In the summer, a major effort went into repairing or replacing thermostat controls and optimizing systems. The thermostat replacement is saving more than 7 billion Btu annually with a cost savings of \$48,409 per year. The effort resulted in a 2 percent reduction in Btu during summer months. Energy consumption was reduced by 8.3 percent for FY 2000 as a result of Crane's diligent efforts. By implementing the basic principles of energy management: contain, control, and optimization, as well as utilizing employee awareness and outreach activities, the Crane Energy Management Program is maximizing the Center's energy benefits.

You Have the Power Campaign Interagency Washington, DC 202-586-4536 Recognizing that personal behavior is critically important to reducing energy consumption, the You Have the Power Energy Awareness Campaign was launched by DOE's Federal Energy Management Program in 1997 to assist Federal energy managers in spreading the word about energy-efficient practices and products, as well as facilitate partnerships with energy-related organizations in the private sector. Now in its fifth year, the campaign instills energy efficiency as a basic value among Federal agencies, private sector companies that work with them, and the general public that use, enjoy, and depend on Federal facilities. The campaign's theme is designed to give every Federal worker authority to take positive action to implement Federal energy reduction goals. Twenty of the largest Federal agencies participate in the You Have the Power Campaign. Along with hosting Interagency planning meetings, working with Agency Coordinators on a one-on-one basis, and utilizing a wide array of outreach materials and events, the campaign recognizes Energy Champions who have developed and advocated innovative practices at their agencies that save energy and money, and improve the efficiency of the Federal Government. During FY 2000, the campaign recognized 71 new Federal Energy Champions, bringing the total number of Energy Champions to 296 since the inception of the campaign.

Property Management Division Great Lakes Region General Services Administration Chicago, Illinois 312-353-2476 The General Services Administration's Great Lakes Region is focusing significant attention on older and historic Federal courthouses as a part of its Courthouse Energy Renovation Program. The courthouses, most of which are between 69 and 101 years old, were in need of significant upgrades. Funds from the Energy Center of Expertise allowed for whole building retrofits of three Federal courthouses in Indianapolis, Indiana; Milwaukee, Wisconsin; and, South Bend, Indiana. More than \$1.44 million was invested in the three courthouses saving more than 13 billion Btu and \$168,000 annually. All three courthouses qualified for the ENERGY STAR® label during 2000 and have received numerous other building awards. The whole building retrofits for the courthouses consisted of energy management system improvements, lighting upgrades, steam trap replacements, and direct digital control upgrades, among others.

# EFFECTIVE PROGRAM IMPLEMENTATION AND MANAGEMENT AWARDS TO SMALL GROUPS

Richard H. Crowson Peter Greenberg Michael Hoffman Margaret Lewis Jane Loyer Foreign Building Operations Department of State Arlington, Virginia 703-875-5740

#### See feature article on the cover of this issue.

Web Site: www.eren.doe.gov/femp

James Kuo Carol Lautzenheiser Guy Lunay Kevin Myles Mark. Trimarchi Greater Southwest Region General Services Administration Fort Worth, Texas 816-978-2553 *The General Services* Administration's (GSA) Greater Southwest Energy Team has successfully accomplished much ground breaking work in the way GSA procures utility services, energy-efficient building equipment, building infrastructure improvements, and energy conservation services. During FY 2000 alone, the Energy Team completed three projects that resulted in significant energy and maintenance savings, and allowed the needed replacement of aging equipment. Two of these projects were financed through an ESPC and one was funded outright. The three projects, encompassing 26 GSA buildings in Texas, will save more than 30 billion Btu and \$740,000 per year, in energy, water, and maintenance costs. The largest project is a \$3.97 million, multiple-building ESPC project, covering seven GSA buildings in the Austin, Texas area. The Energy Team's work has provided a substantial and much needed supplement to the limited funds available for updating, repairing, and maintaining the region's Federal properties.



(standing | to r): Mark Trimarchi, Carol Lautzenheiser, Kevin Myles. (Seated | to r): James Kuo, Guy Lunay.

LTC Carmen Anderson LTC Scott Ayers, PE, CEM CW3 Rickey Johns, CEM LTC Don Juhasz, ME, CEM Mr. Sam Truax, PE, CEM Army National Guard Department of the Army Arlington, Virginia 703-607-7954 With its broad-based energy program, the Army National Guard's Energy Working Group serves 29,608 facilities in all 50 states and several U.S. Territories. During FY 2000, the Energy Working Group assisted in the development and implementation of energy projects totaling more than \$5.3 million, including the first Energy Conservation Investment Program military construction project that was awarded for \$850,000. Eight comprehensive energy audits were completed at 122 facilities resulting in 378 projects with a first year savings of \$1.2 million. The Energy Working Group managed wind data and installed a 225-kilowatt wind turbine with an annual savings of \$22,000. To enhance energy awareness, the Energy Working Group provided two energy manager training courses and an executive course for 127 energy managers and the Army National Guard's leadership. The Energy Working Group also hosted Army National Guard Day at Energy 2000 for approximately 90 participants and presented energy awareness briefings at the Army National Guard's National Engineering Conference for 328 Army National Guard engineering participants.

# EFFECTIVE PROGRAM IMPLEMENTATION AND MANAGEMENT AWARDS TO INDIVIDUALS

Thomas W. Waller Columbus Air Force Base United States Air Force Columbus Air Force Base, Missouri 662-434-7403



Assertive energy management and consistent dedication are just a few of the exemplary characteristics that Thomas Waller brings to the Energy Program at Columbus Air Force Base. His technical expertise and mission minded service have improved the Base's infrastructure, reduced maintenance requirements, and increased operations. Through Mr. Waller's efforts, the highlight of Columbus AFB's Energy Program is a phenomenal increase of nearly 11 percent in energy efficiency at the Base. During FY 2000, Mr. Waller partnered with the Tennessee Valley Authority to analyze the potential application of capacitor banks to lower the power factor of Columbus AFB's electric service. Doing so reduced the Base's summer cooling costs by \$3,000 per month. Under Mr. Waller's leadership the Energy Program's "Tiger" Team conducted a comprehensive facility review targeting not only the HVAC system, but other factors which change its efficiency and optimization. The Team initiated an energy monitoring and control system-supported trend log analyses and hands-on facility surveys. The evaluations will result in an estimated annual energy savings of 205 million Btu. During FY 2000, Mr. Waller also reviewed \$2.3 million in construction projects for energy efficiency by using his engineering expertise, a highlycoordinated systems approach, and a thorough assessment of all energy-related systems. In addition, his rigorous implementation of ESPC contracting has proven its effectiveness. Mr. Waller's consistent efforts during FY 2000 made the year an outstanding success for the Columbus AFB Energy Program.

Garland Scott Randolph Air Force Base United States Air Force Randolph Air Force Base, Texas 210-652-4601



Spearheading one of the most effective and efficient energy programs in the Air Force, Garland Scott brings 25 years of energy management experience and knowledge to the 13 Air Force installations at Randolph Air Force Base, Texas. Mr. Scott's dedication to the Air Education and Training Command's (AETC) Energy Management Program has been instrumental in AETC achieving a 22.2 percent reduction over its 1985 baseline. He developed and implemented the AETC Energy Management Incentive Award in which 13 Air Force installations compete for \$100,000 each year for their Energy Awareness and Conservation Programs. The program has sparked genuine interest within the command and has contributed to AETC consistently meeting or exceeding energy reduction goals. Mr. Scott's efforts to finance energy efficiency improvements have resulted in the development of 15 ESPC task orders totaling \$44 million. The ESPC's will result in a cumulative reduction in energy savings of \$5.2 million per year and save 287 billion Btu per year with a total of 5.1 trillion Btu saved over the life of the contracts. He was also responsible for developing ten task orders for utility energy service contracts. Mr. Scott's other noteworthy accomplishments at Randolph AFB include the installation of a 1.2 million gallon thermal energy storage tank, central chiller plant tie-ins for six additional facilities, and removal of six energy-hog chillers, and automatic controls to capture peak-load savings. The upgrade to the Base became a model for several other initiatives at AETC. Mr. Scott's keen knowledge of the energy field coupled with his extraordinary knowledge and involvement in alternative financing have proven critical to the successful implementation of over \$200 million in projects.

## **EXCEPTIONAL SERVICE AWARDS TO INDIVIDUALS**

Ron Durfey United States Marine Corps Yuma, Arizona 520-269-2734



Located in the Southwest corner of Arizona, the Marine Corps Air Station (MCAS) Yuma is the most heavily utilized air facility in the Marine Corps. Because of its location and mission requirements, the MCAS had to be both creative and versatile in dealing with energy and water usage that directly affect productivity and working conditions at the Air Station and the quality of life for Marine Corps personnel and family members. With dwindling Federal funding available for energy conservation, Mr. Durfey was one of the first energy managers to implement guidance issued by Headquarters, Marine Corps, to utilize alternative financing to execute energy efficiency projects. These projects include lighting retrofits, replacement of antiquated motor generators, and recommissioning of thermal energy storage units. Under Mr. Durfey's leadership, MCAS Yuma has reduced energy consumption at its shore facilities by more than 25 percent versus the 1985 baseline. William G. King, Jr. United States Air Force Eielson Air Force Base, Alaska 907-377-1194



William King's innovative approach to energy management has consistently helped to save energy and improve the efficiency on Eielson Air Force Base. His tireless efforts during FY 2000 will result in an energy and water savings performance contract that will save approximately 24 billion Btu per year, equating to more than \$330,000 saved annually. His expertise in renewable energy sources ensured the conversion of 1,505 tons of solid waste into a usable fuel source for Eielson Air Force Base. Mr. King's impressive knowledge of utility systems was instrumental in the planning, design, and construction of several distribution projects that may save the Base over \$3 million in energy costs annually.

Gene McCann Mike Monroney Aeronautical Center Academy Federal Aviation Administration Department of Transportation Oklahoma City, Oklahoma 405-954-5870



Gene McCann is the energy coordinator of the Academy organization at Mike Monroney Aeronautical Center's (MMAC) largest single energy-consuming entity. As energy coordinator, Mr. McCann undertook an energetic campaign to instill new attitudes about and commitment to energy conservation in a complex organization. The Academy's mission requires providing diverse training classes and operating major energy-consuming equipment beyond normal office hours. Conserving energy would require that MMAC's systems be operated differently. The Academy's energy consumption was not being reduced nearly enough to comply with Federal mandates of MMAC's reduction goals. Mr. McCann has been successful in incorporating energy efficiency in all new and renovation construction projects. Directly due to Mr. McCann's perseverance and imaginative campaigning, the Academy has become one of the most energy conscious and efficient organizations within MMAC. His accomplishments include establishing an energy conservation team, developing an Academy energy conservation plan, and exceeding quarterly goals by 7 percent, remarkably through one of the coldest winters on record. As a result of Mr. McCann's efforts, MMAC saved more than \$134,000 and 13 billion Btu during FY 2000.

## DIRECTOR'S AWARD TO INDIVIDUALS

James Trocke United States Marine Corps U.S. Marine Corps Air Station, Iwakuni 011-81-6117-53-2903 Chief James Trocke is receiving the 2001 Director's award for his role in three projects undertaken during FY 2000. As Air Station Energy Manager, Chief Trocke orchestrated Energy Awareness Week 2000, full of fun and innovative events which encouraged all Air Station residents to focus on energy conservation and usage. On a regular basis, Chief Trocke ensures that the Air Station is using its limited and expensive resources to their fullest. Renegotiation of the Base's electrical billing rates, implementation of an aggressive underground pipeline water leak detection plan, and a comprehensive energy conservation awareness program are just a few outstanding achievements Chief Trocke spearheaded during FY 2000. To combat the long term effects of incurring new electrical consumption peak levels, the Marine Corps Air Station Iwakuni, Japan, and Chief Trocke implemented a comprehensive action plan called "Green Out" during FY 2000. Recognizing the costly nature of setting new electrical consumption peaks, the command implemented a comprehensive, power shaving plan to reduce electrical loads during critical time periods. Aggressive on-Base media coverage and Base-wide flash e-mail messages on all station personal computers ensured that all electrical power users participated in reducing office, household, and workplace usage where feasible. As a result of the entire Air Station's cooperation in this program, new electrical peak charges were avoided. This Basewide effort, along with Mr. Trocke's personal achievements have saved the Iwakuni Air Station more than 50 billion Btu and more than \$1.5 million.



DOE Assistant Secretary David Garman presents the Director's Award to Chief James Trocke (MCAS Iwakuni).

## LOU R. HARRIS JR. AWARD

David Waller Hawaiian Electric Company Honolulu, Hawaii 808-543-4794



David Waller works to form partnerships with Federal agencies in Hawaii to help them achieve the goals outlined in Executive Order 13123. Mr. Waller accomplishes this task by installing energy-efficient technologies, employing water conservation measures, and incorporating the use of renewable energy at Federal facilities. Mr. Waller provides leadership and overall management responsibility for the Energy Services Department at the Hawaiian Electric Company (HECO). Mr. Waller's professional standards of excellence are exemplified in his technical and team-building expertise. His efforts to develop partnerships between HECO and its Federal customers are focused on cooperatively accomplishing mutual objectives which include achieving energy and cost savings and environmental benefits, improving work environments, and promoting economic development and job creation. Under Mr. Waller's guidance, "A Partnership to Save Energy" has resulted in a number of successful partnerships between Hawaiian Electric Company and a number of Federal agencies, including the General Services Administration, Department of Defense, United States Postal Service, Department of Energy, and the Environmental Protection Agency. Mr. Waller was also involved in implementing HECO's own Green Lights Program which, through a major conversion to efficient lighting now saves the company 1.3 million kilowatts per year.

John E. Surash Department of the Navy San Diego, California 619-556-2199



As Assistant Chief of Staff for facilities, Captain John E. "Jack" Surash plays a key leadership role in maintaining the energy efficiency of the Navy Region Southwest (NRSW). In partnership with the Southwest Division, Naval Facilities Engineering Command (SOUTHWESTDIV), Captain Surash initiated an aggressive program to upgrade the energy efficiency of NRSW facilities throughout the San Diego area through SOUTHWESTDIV's Utility Energy Service Contract (UESC) with San Diego Gas & Electric. The projects performed under the UESC offer over \$5 million per year in energy savings with a simple payback of less than 10 years. In addition to advancing the energy efficiency of NRSW facilities through UESC contracting, Captain Surash established a Regional Energy Program Office (REPO) to manage NRSW's energy programs. He also established one of the Federal Government's first resource efficiency management contracts to provide expert support to REPO, and built strong partnerships with SOUTHWESTDIV, the Federal Energy Management Program, the Department of Energy National Laboratories, the Federal Utility Partnership Working Group, and San Diego area local governments and community groups. Captain Surash's accomplishments were demonstrated during the California energy crisis, when he mobilized his team and enlisted the help of his partner organizations to counter the effects of the crisis and to help address its root causes. As a direct result of Captain Surash's efforts, three NRSW bases in San Diego achieved a cumulative 11 percent reduction in shore facility electricity consumption since July 2000 compared to the same period last year.

## **ENERGY STAR® BUILDING AWARD FOR SUPERIOR PERFORMANCE**



ENERGY STAR® is a symbol of energy efficiency established by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy (DOE). Buildings that are among the top 25 percent nationwide in terms of energy performance (earning a benchmarking score of 75 or greater) and maintain an indoor environment that conforms to industry standards can qualify to receive the ENERGY STAR® label for buildings.

In FY 2000 the following buildings, operated and maintained by the General Services Administration (GSA), achieved a benchmarking score of 95 or higher:

Prince Kuhio Kalanianole Federal Building, U.S. Courthouse Honolulu, Hawaii

El Paso Federal Office Building El Paso, Texas

Federal Building, U.S. Courthouse Lafayette, Louisiana

Federal Building Tucson, Arizona

U.S. Customhouse New Orleans, Louisiana

A. Maceo Smith Federal Building Dallas, Texas

Federal Building, U.S. Courthouse Las Vegas, Nevada

Chet Holifield Federal Building Laguna Niguel, California

The superior performance rating of these Federal buildings reflects the leadership, dedication, and contributions of GSA building designers, operators, and managers who are responsible for the Federal Government's real property assets.

## 2001 FEDERAL ENERGY AND WATER MANAGEMENT AWARDS CERTIFICATES OF RECOGNITION

#### WATER MANAGEMENT

#### Individual

Juanito P. Licud, Department of Health and Human Services Leanne A. Whitehead, Tennessee Valley Authority

#### Small Group

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#### Organization

Camp Lejune, United States Marine Corps National Institutes of Health, Department of Health and Human Services

#### MOBILITY ENERGY

#### Organization

USS Boxer, Department of Defense - Navy USS Taylor FGG-50, Department of Defense - Navy

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#### Organization

U.S. Geological Survey, Department of the Interior Marine Corps Logistics Base, Barstow, CA, Department of Defense - Marines Multiple West Coast Regional Federal Offices, Interagency NASA Headquarters, National Aeronautics and Space Administration

#### **EXCEPTIONAL SERVICE**

#### Individual

Donald M. Fournier, Department of the Army Randy Ortgiesen, Department of Energy Upcoming Events

## FEMP Training Reminders

#### High Performance, Low Energy Laboratory Design Workshop

in conjunction with Laboratories for the 21st Century January 7, 2002 Washington, D.C. www.epa.gov/labs21century/ training/index.htm 816-531-SAVE (7283)

#### 2nd Annual Workshop

on Microturbine Applications January 17-18, 2002 Washington, D.C. maldonados1@ornl.gov

#### Water Resource Management

January 28-29, 2002 Tampa, FL www.pnl.gov/femp

#### Introduction to

Facility Energy Decision System January 30, 2002 Tampa, FL www.pnl.gov/femp

#### Advanced Facility Energy Decision System

January 31-February 1, 2002 Tampa, FL www.pnl.gov/femp

#### FEMP Super ESPC

February 5-6, 2002 San Diego, CA 703-243-8343

#### **Operations & Maintenance Management**

February 20-21, 2002 Portland, OR www.pnl.gov/femp

#### FEMP Lights Web Course (Self-paced)

February 25-March 29, 2002 www.femplights.com 916-962-7001

## **Upcoming Conferences**

Laboratories for the 21st Century Conference January 8-10, 2002 Washington, D.C. www.epa.gov/labs21century/

#### 2002 ASHRAE AHR Expo

January 14-16, 2002 Atlantic City, NJ www.ashrae.org

#### Reducing Your Energy Costs

January 31-February 1, 2002 New Orleans, LA www.cbinet.com

#### Greenprints

February 20-23, 2002 Atlanta, GA www.southface.org/home/g2k02/ g2k02index.html

## Register Now for FEDS and Water Management Workshops

FEMP in partnership with Tampa Electric will be holding two important workshops at the Tampa Electric Energy Technology Resource Center in Tampa, Florida. Fees will be waived by FEMP for these two special workshops!

#### Water Resource Management Workshop - January 28-29, 2002

This workshop will cover a broad range of topics to help you evaluate your facilities, develop a water management plan, and understand water conservation measures specific to your site. Topics covered will include: opportunities for saving water with efficient technologies and techniques, water reuse/recycling, drought management, water

#### Introduction and Advanced FEDS Workshop - January 30-February 1, 2002

With the release of FEDS 5.0, the Facility Energy Decision System (FEDS) introduces a new level of easy-to-use, Windows-based, project development software for energy efficiency.

FEDS is a software tool that can quickly identify energy improvement projects that maximize savings at your entire site or a single building. With limited user inputs, this program can:

• determine cost effectiveness and develop energy retrofit projects,

auditing, leak detection, metering, and legislative issues.

The workshop will also include presentations from field experts on specific conservation technologies. The agenda will include ample time for discussion with the experts.

## Facility • calculate electrical demand and energy

- consumption, and
- provide detailed energy analysis of single buildings to multi-building installations.

The one-day, Introduction to FEDS, workshop is designed for first time FEDS users. The follow-on, Advanced FEDS, workshop provides you with the opportunity to run FEDS with site-specific data. Once completed, you leave the workshop with a list of savings opportunities specific to your site.

Again, FEMP is waiving tuition fees for these courses. Register now to secure your spot at the workshop. To register, please contact Nicole Roy at 509-372-4368 or register online at www.pnl.gov/femp.

## FEMP PRODUCTS LIST REQUEST FORM

Mail, call, or fax your reply to: U.S. Department of Energy Office of Energy Efficiency and Renewable Energy Federal Energy Management Program, EE-90 1000 Independence Avenue, SW Washington, DC 20585-0121	Call 1-800-DOE-EREC (363-3732) or Fax 703-893-0400; Outside of the U.S. call: 703-287-8391 Or order online from the FEMP Home Page: www.eren.doe.gov/femp/ordermaterials.html
ANNUAL REPORTS:         2000 FEMP Accomplishments Report         1999 FEMP Accomplishments Report         FY 1998 Annual Report to Congress         Greening of the White House Second Annual Report         CASE STUDIES:	ENERGY SAVINGS PERFORMANCE CONTRACTING:         ESPC Regulation         Federal Measurement & Verification Guidelines: Version 2.2         List of Qualified Firms         M&V Guidelines (Overview)         Model Solicitation         Performance Contracting:
<ul> <li>ESPC Case Studies:</li> <li>Communication and Collaboration Keep San Francisco VA Medical Center Project on Track</li> <li>First Regional Super ESPC A Success on Kodiak Island</li> <li>Regional Super ESPC Saves Energy and Dollars at NASA Johnson Space Center</li> </ul>	<ul> <li>Practical Guide to Savings and Payments in Super ESPC Delivery Orders</li> <li>Request Form for Qualified List Application</li> <li>Super Energy Savings Performance Contracts</li> <li>Table of Awarded Contracts</li> </ul>
Technical Assistance Case Studies:         Brighter Days and Nights at the US Soldiers' and Airmen's Home         Electrifying Pinnacles         Energy-Efficient Retrofits at the Carl Hayden Visitors Center	Federal Greening Initiatives  Federal Energy and WATER MANAGEMENT AWARDS: Criteria and Guidelines
<ul> <li>Energy-Efficient Retrofits at the Carl Hayden Visitors Center</li> <li>Energy Efficient Technologies in the Frances Perkins Building</li> <li>The ForrestalBuilding Relighting Project Saves \$400K Annually</li> <li>Fort Irwin Energy Efficiency Improvement Program</li> <li>Greening of the White House</li> <li>Heating with Steam at VA Medical Centers</li> <li>Joshua Tree and Mojave Go Solar</li> <li>New National Conservation Training Center A Model of Energy Efficiency Design</li> <li>Renewable Energy at Channel Island National Park</li> <li>Showering with the Sun at Chickasaw National Recreation Area - Detailed Case Study</li> <li>Solar Success Story at Moanalua Terrace</li> <li>Unique Partnership at Fort Lewis</li> <li>Water Conservation at the Denver Federal Center</li> <li>Utility Services Case Studies:</li> <li>Energy Efficiency Upgrades for Fermilab Infrastructure</li> <li>Energy Efficiency Upgrades for Little Rock AFB</li> <li>Innovative Utility Partnerships at Fort Lewis, WA</li> <li>Partnerships with the US. Postal Service</li> <li>Thermal Energy Storage at a Federal Facility</li> <li>Total Solutions Approach at White Sands Missile Range</li> </ul>	FEDERAL PROCUREMENT CHALLENGE:         Buying Energy Efficient Products         FEDERAL TECHNOLOGY ALERIS:         Commercial Heat Pump Water Heaters         Integrated Systems         Liquid Refrigerant Pumping         Modulating/Condensing Fuel-Fired Water Heater and Hydronic Boiler         Natural Gas Fuel Cells         Ozone Cooling Tower Water Treatment         Parabolic-Trough Solar Water Heaters         Solar Water Heating         Photovoltaics         Refrigerant Subcooling         Residential Heat Pump Water Heaters         Solar Water Heating         Spectrally Selective Glazing         Steam Trap Performance Assessment         Thermal Energy Storage for Space Cooling (revised March 2001)         Transpired Collectors (Solar Preheaters for Outdoor Ventilation Air)         Two-Wheel Desiccant Dehumidification System         Ultrasound Humidifiers         Waste Chill Recovery Heat Exchangers for Commercial-Size Automatic Ice Makers
Other Case Studies:         Big Savings from the World's Largest Installation of Geothermal Heat         Pumps at Fort Polk, Louisiana         High Temperature Hot Water Plant at Naval Amph. Base         USMC's Twentynine Palms Central Heating Plant	<ul> <li>Combined Heat &amp; Power: A Federal Manager's Resource Guide Final Report</li> <li>Counting on Solar Power for Disaster Relief</li> <li>Energy Prices and Discount Factors for Life-Cycle Cost Analysis - April 2001</li> </ul>
<ul> <li>ENERGY EFFICIENCY AWARENESS:</li> <li>Power Outage—Switch the Time of Your Peak Energy Use (<i>poster</i>)</li> <li>Facing the Future, A Directory of Federal Champions</li> <li>Facing the Future, Second Edition 1999-2000</li> <li>You Have the Power – Power Kit</li> <li>YHTH Brochure – FEMP Campaign to Honor, Inspire, Encourage Energy Leadership</li> <li>YHTP Brochure – FEMP Has the Know How</li> </ul>	<ul> <li>Fight 2001</li> <li>Federal Government Energy Consumption at a Glance - February 2001</li> <li>Federal Government Energy Consumption at a Glance - 1999</li> <li>FY 2002 Training Catalog</li> <li>Greening Federal Facilities - 2nd Edition</li> <li>Greening of DOE Headquarters - Second Year Status Report</li> <li>Greening of the White House - Six Year Report Nov. 1999</li> <li>Greening the Government - A Report to the President on Federal Leadership and Progress (April 22, 2000)</li> </ul>

## FEMP PRODUCTS LIST REQUEST FORM (CONTINUED)

<ul> <li>How to Get Information on New Technologies</li> <li>How to Implement an Energy-Saving Project (Seven Steps to Savings)</li> <li>Laboratories for the 21st Century: An Introduction to Low-Energy</li> </ul>	SOFTWARE: BLCC/ERATES/EMISS Software and Manuals BLCC (The Building Life-Cycle Cost), Version 4.8-2000
Design	BLCC Manual
NIST Handbook 135 1995	BLCC 5
Procuring Low-Energy Design and Consulting Services	ERATES (Electricity Rates), Version 1.11
Lighting:	ERATES Manual
Specifications: Energy Efficient Lighting – Technologies for Existing	EMISS, Verison 1.0
Federal Buildings	BLCC 5 Software
Federal Lighting Guide	FEDS (Federal Energy Decision Screening), Version 4.0 Software
Benefits of Energy Effective Lighting	Manual*
Economics of Energy Effective Lighting for Offices	FRESA (Solar/Renewable Energy), Version 2.5 Software and Manual
	WATERGY (Water Conservation) Software
<u>Newsletters</u> – <i>FEMP Focus</i> .	WATERGY Manual
Subscription to the <i>FEMP Focus</i> Newsletter	Available to download from Web site ONLY:
Latest/Past/Special Issue	FLEX (Federal Lighting Energy Expert), Version 3.0 Software
Special Issue – Executive Order 13123 – July 1999	*Available to Federal Personnel Only
Special Issue – Executive Order 12902 – Jan. 1994	TECHNOLOGY FOCUSES:
Special Issue – Energy Policy Act of 1992 – Feb. 1992	Duty Cycling Controllers Revisited
PROGRAM OVERVIEWS:	Energy Efficiency Improvements Through the Use of Combined Heat
Energy Efficiency and Renewable Energy in National Parks	and Power (CHP) in Buildings
Energy Savings Performance Contracting	Geothermal Heat Pumps Deliver Big Savings for Federal Facilities
Federal Energy Efficiency through Utility Partnerships	New Wind Energy Technology are Cost-Effective in Federal
Federal Energy Showcases	Applications
Federal Participation in Million Solar Roofs	Power Conditioner Also Provides Power Factor Correction
FEMP Program Overview	Single-Family Residential Building Weatherization
FEMP Renewable Energy Program	TECHNOLOGY INSTALLATION REVIEWS:
FEMP Training Program	Assessment of Donlee 3000-Horsepower TurboFireXL Boiler
Fort Lewis Conservation Program	- Technology Installation Review
Greening Federal Facilities New Technologies Demonstration Program	Assessment of High-Performance, Family-Sized Commercial Clothes
SAVEnergy Program	Washers
Super Energy Savings Performance Contracting	Energy Savings from Dual-Source Heat Pump Technology
Water Conservation (posters and bookmarks)	Energy Saving Refrigerated Walk-in Boxes
	White Cap Roof Spray Cooling System
TECHNOLOGY FACT SHEETS:	TELEFEMP VIDEOS:
Geothermal Heat Pumps	TeleFEMP VIII: FEMP's Suite of Services
Passive Solar Design	
<ul> <li>Photovoltaics - Systems that Convert Sunlight to Electricity Can Meet</li> <li>Many Different Needs</li> </ul>	UTILITY SERVICES:
Solar Ventilation Preheating	Primer on the Deregulation and Restructuring of U.S. Electric Utility Markets
Solar Water Heating	Utility Energy Services Contracts: Enabling Documents
ooiar water i reating	Ouncy Energy Services Contracts. Enabling Documents
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rifst maine:	_ Last Mame:		
Title:			
Organization/Agency:			
Street Address:			
City:		Country:	
Phone:	Fax:	-	
Email:			

Fax form to 703-893-0400.

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If you are making projects happen at your Federal facility, FEMP would like to hear from you. Please submit project descriptions to Annie Haskins at the address listed below. You will be contacted for additional information if your project is selected to be featured in a future edition of the *FEMP Focus*.

#### Address mail to:

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