Federal Workers:
ENERGY SMART

at home...

at work...

on the move...

ACCOMPLISHMENTS REPORT
2000

Federal Energy Management Program
Office of Energy Efficiency and Renewable Energy
United States Department of Energy

LETTER FROM THE DIRECTOR

Dear Colleagues,

The Federal Government can set extraordinary examples for the American public by its leadership on energy and the environment. In this first year of the new millenium, we have proven that, through our strong Federal partnerships, we can take on and meet impressive challenges to reduce energy use and cost.

The FY 1999 Report to Congress shows that the Federal Government reduced its energy consumption by 20.5% compared to 1985 baselines. In doing so, we met our FY 2000 goal a year early! However, we have equally impressive challenges to face in the years ahead. We are required by Executive Order 13123 to continue reducing the energy intensity of our Federal buildings by 30 percent in 2005 and 35 percent in 2010. Our continued partnerships will be the key to our future success.

In this past year, the Federal Energy Management Program has provided national leadership and guidance on ways to use our resources wisely. We have helped raise awareness through new projects and initiatives that have resulted in proven savings throughout all areas of Federal operations.

In the coming year, FEMP will continue to guide the Federal Government's real estate portfolio through new and exciting opportunities to reduce our energy and water usage, increase our use of renewable energy, and manage our utility costs. I look forward to working with you as we continue to lead by example.

Sincerely,

Beth Shearer

Beth Shearer, Director
Federal Energy Management Program
Office of Energy Efficiency and Renewable Energy

THE OPPORTUNITY

There is now a rapidly changing landscape in Federal energy management. Federal facilities managers face new and difficult challenges every day, including:

- *Restructuring of electric utilities;*
- *Volatile fuel prices and supplies;*
- *New mergers and acquisitions; and*
- *Convergence of technologies.*

These accelerating shifts in the energy market directly impact the implementation of Executive Order 13123. This new mandate ratchets up earlier standards contained in the Federal Energy Policy Act of 1992 (EPAct) and Executive Order 12902. The Federal government is now required to reduce energy consumption per gross square foot by 30 percent in 2005 and 35 percent in 2010, compared to 1985 base levels. As a result, Federal agencies must double their current rate of energy savings. When the Government reaches its target by 2010, American taxpayers will be saving $750 million each year.

Federal operations and facilities include **500,000 Federal buildings** *around the globe.*

This is an extraordinary opportunity for dollar savings and pollution prevention. Federal operations and facilities include 500,000 Federal buildings. Around the globe, these facilities cover more than 3.0 billion square feet of floor space. They include offices, hospitals, laboratories, housing, prisons, and parks. The total energy bill to the nation—more than $3.4 billion annually.

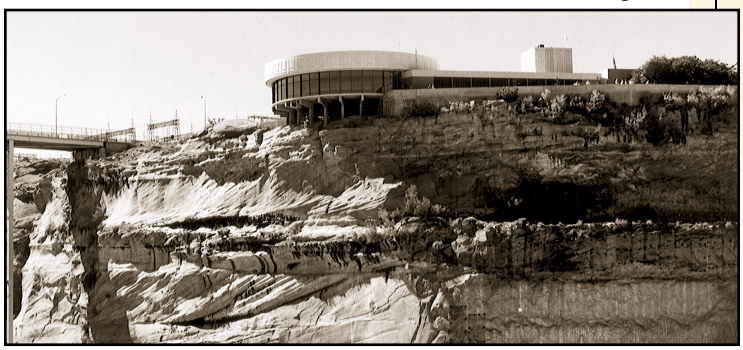
The good news is that a successful track record has already been established. From 1985 to 1999, the Government has committed over $2.5 billion in investment in energy efficiency. The Nation has saved over $9 billion in energy bills, while still providing the same, or better, levels of critical government services.

However, meeting higher efficiency standards in the face of great demands requires great leadership. Federal energy managers must use increasingly innovative technologies and solutions. They must be more resourceful in their applications. They must expand employee awareness of wise energy habits. They must build new partnerships with other agencies and the private sector. As the largest single consumer of energy in the nation, the Federal government has both an enormous responsibility and a tremendous opportunity to lead by example.

When the Government reaches its **target** *by* **2010,** *American taxpayers will* **be saving $750 million each year.**

The Veteran's Administration Medical Center at Providence, Rhode Island will benefit from a FEMP SAVEnergy audit.

The Carl Hayden Visitor's Center at Glen Canyon Dam uses a variety of energy-efficient, renewable energy, and water conservation technologies.



The new EPA National Computer Center in Research Triangle Park, North Carolina will include a 100 kW roof-integrated system.

THE FEDERAL SECTOR

In 1973, the Federal Energy Management Program was chartered to lead the Federal government toward a more efficient use of energy resources. FEMP's mission is to lower the cost of government by helping agencies reduce energy and water use, manage utility costs, and promote the use of solar and other renewable energy resources in Federal operations.

FEMP provides economic and technical resources to create a more productive and competitive Federal workforce, offering agencies the skills, the means, and the initiative to undertake projects that save energy, water, and taxpayer dollars. FEMP also sets an example for the Nation by passing along the best of its knowledge and practices to State and local governments, and ultimately to the private sector.

FEMP *provides* **economic and technical** *resources to create a* **more productive and competitive** *Federal workforce.*

Of course, the key beneficiaries of FEMP's energy saving efforts are its primary customers—the Federal agency facility managers and coordinators and the procurement, design, operations, maintenance, and engineering staffs. These dedicated teams oversee critical energy management activities, guide large investments in energy efficient practices, and direct the training programs that keep employees up-to-date with the most cost-effective technology.

In FY 1999, the Federal government reduced its energy consumption per square foot by 20.7 percent since 1985, and in doing so, reached its FY 2000 goal one year early. With this proven accomplishment, FEMP is confidently assisting the Federal government in moving toward its next milestone of a 30 percent reduction by 2005.

In particular, FEMP has been working hard to help agencies meet the new efficiency requirements of E.O. 13123. In FY 2000, FEMP developed eight documents providing guidance under Sections 502 and 503 of the Executive Order, including guidance on establishing performance goals for energy-intensive facilities, establishing water efficiency improvement and renewable energy goals for Federal facilities, performing life-cycle analyses, and more.

FEMP's leadership and accomplishments have:

- Increased Federal employee awareness,
- Increased and improved partnerships with the private sector,
- Increased energy efficient standards in product procurement,
- Provided cost-effective, high quality services and equipment,
- Influenced outcomes by promoting good energy habits, and
- Increased the number and scope of energy efficiency projects.

In FY 2000, a special committee was formed of public and private sector members to recommend new ways to achieve the goals of E.O. 13123. At its first meeting, the new Federal Energy Management Advisory Committee (FEMAC) reviewed issues affecting Federal energy management. FEMAC addressed energy-savings performance contracts, utility energy service contracts, energy efficient products, building design, renewable and clean energy technologies, and other important issues.

By focusing on its customers with a clear purpose, FEMP will continue to help Federal agencies meet their energy challenges and attain their cost-saving and pollution-prevention goals.

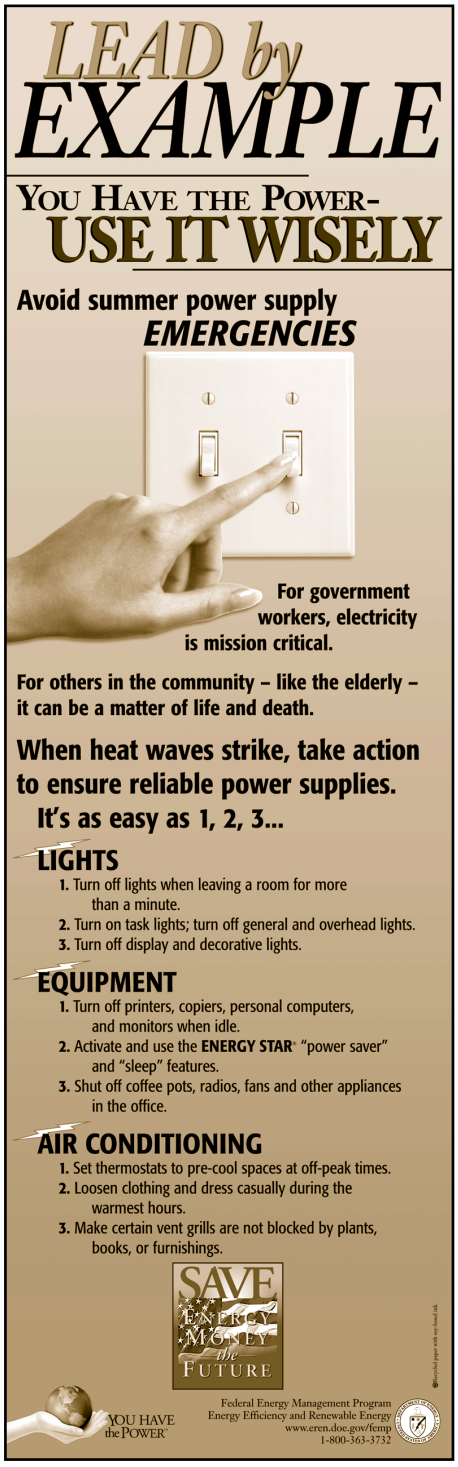
FEMAC members from left to right: Steven Huff, Robert Collins, Helen Krupovich, Kenneth Calvin, Jared Blum, Dan W. Reicher, Stuart Berjansky, Erbin Keith, Beth Shearer, Richard Earl, Joan Glickman, Vivian Loftness, Cynthia Vallina, Shelly Fidler, and Mary Palomino.

"Lead By Example." It's the Department's theme, and FEMP's slogan, for a new and ongoing initiative. In FY 2000, the initiative helped Federal agencies plan for unusual power disturbances caused by extreme temperatures in the summer and later by steep hikes in natural gas prices in the winter.

In the Spring of 2000, predictions of hotter-than-normal summer temperatures, as well as increasing electricity demand in our strong economy, led to the concern that there would not always be enough power to meet demand. FEMP called on Federal agencies to lead the nation in reducing energy demand at peak times. It implemented a Summer Reliability Initiative to increase power generation during periods of high demand and shift demand to off-peak times to prevent major disturbances in electricity supply.

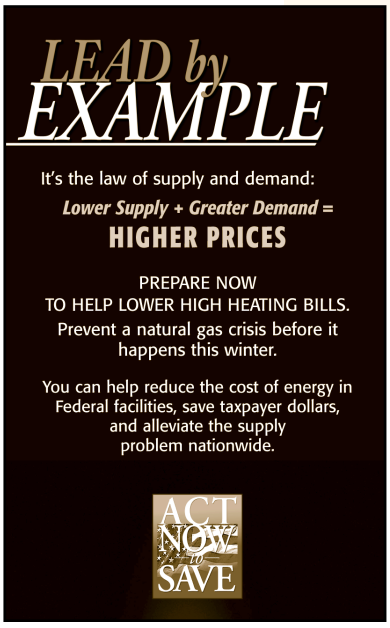
In the Fall of 2000, natural gas price hikes provided yet another opportunity to refocus attention on ways that Federal facilities could reduce their natural gas consumption and overall energy costs. FEMP listed specific actions for Federal building managers and other employees to take to conserve energy at home and on the job. Technical information, provided through the *FEMP Focus* technical bulletin, was supplemented with outreach materials through FEMP's YOU HAVE the POWER campaign.

Lead by Example gives Federal agencies tools to mitigate adverse budgetary and operational impacts of fuel supply and electrical demand. At the same time, Federal workers assist others in the community by preventing serious disturbances to the electricity grid that can negatively impact commerce, education, and the public health, safety, and welfare. FEMP will continue to provide timely guidance, education, technical advice, and outreach materials as we reconfirm our commitment to Lead by Example.



FEMP *will continue to provide* **timely guidance, education** *and technical advice.*

Outreach materials from the Summer and Winter initiatives helped Agencies prepare for disturbances in the electrical supply.



PARTNERING WITH THE PRIVATE SECTOR

By forging working partnerships with utilities, energy service companies, and product manufacturers, FEMP helps Federal customers and State governments meet energy efficiency requirements, streamline procurement, and improve operations. In particular, infrastructure investment, such as retrofits and adoption of energy-efficient technology, is encouraged by offering utilities and private sector companies long-term contracts with Federal agencies that allow them to share in the savings.

Over the past year, utility restructuring has presented a range of new challenges to Federal energy managers. Twenty-five states have passed restructuring legislation. Each of these states have drafted new market rules that are setting a course to open electric-utility markets in the coming years.

In FY 2000, *FEMP reported over* **$110 million invested** *in new Federal utility projects.*

To meet these challenges, FEMP has reorganized its front line teams to be more responsive to customer needs in the field. Regional offices now have the capability to address technical and financial issues for both Energy Savings Performance Contracting (ESPC) and utility projects. Federal customers can call on FEMP regional staff to help them pursue capital improvements, utility energy services, financing, procurement, and other incentives.

FEMP is also stepping up its Super ESPC program through the streamlined negotiation of site-specific delivery orders with energy service companies. This program alone aims to reduce Federal energy use by 10 trillion of the 60 trillion BTU needed to reach the 35 percent reduction goal by 2010. To date, the private sector has invested a total of $109 million in Federal energy efficiency projects via Super ESPCs. Of this total, 20 delivery orders worth $61.5 million were awarded in FY 2000.

Examples of ESPC delivery orders awarded in FY 2000 include:

- Veterans Affairs Medical Center, Salt Lake City, Utah, awarded to Johnson Controls, Inc. for contract investment of $4.8 million over 19 years.
- Department of Energy, Pantex facility, Amarillo, Texas, awarded to NORESCO for contract investment of $4.4 million over 19 years.
- Department of Defense, NIMA building, St. Louis, Missouri, awarded to EUA Cogenex for contract investment of almost $950,000 for 13 years.
- General Services Administration, Leo O'Brien Federal Building, Albany, New York, awarded to Honeywell, Inc. for contract investment of over $980,000 over 12 years.
- Department of the Interior, Bureau of Indian Affairs – Sherman Indian School, Riverside, California, awarded to Sempra Energy Services for contract investment of $1.9 million over 21 years.
- Environmental Protection Agency, Robert S. Kerr Research Lab, Ada, Oklahoma, awarded to Johnson Controls for contract investment of $4.3 million for 25 years.

In addition to implementing more delivery orders for ESPCs, FEMP's regional teams have also started to expand their work in the area of utility contracts. In FY 2000, FEMP reported over $110 million invested in new Federal utility projects. One such project includes a partnership between the Department of the Army's Fort Detrick and Allegheny Power. With financial assistance from its local utility and technical assistance from FEMP, Fort Detrick has undertaken a site-wide conservation program. It will include lighting, HVAC, steam and electrical distribution, and water distribution systems. The project will save $1.5 million annually.

Find out more about FEMP delivery order awards at: *www.eren.doe.gov/femp/financing/doawards.html.*

FEMP'S PRODUCT ENERGY EFFICIENCY RECOMMENDATIONS

FEMP'S Product Energy Efficiency Recommendations help Federal buyers make intelligent purchasing decisions.

- Office technologies
- Water saving technologies
- Lighting
- Commercial appliancesand equipment
- Residential appliances and equipment
- Constructions products
- Commercial/industrial technologies

TECHNICAL ASSISTANCE / TRAINING

Energy managers must understand a host of regulations, technologies, and financing options to effectively do their jobs. To help Federal managers and employees make informed decisions, FEMP provides technical project assistance through a comprehensive range of services. These include energy audits, new technology demonstrations, design assistance, and technical training. Above and beyond these service areas, FEMP's technical assistance team forms partnerships with Federal agencies to combine the funding and technical expertise to implement clean energy projects.

In FY 2000, FEMP renewed a partnership with the National Park Service to invest $1.6 million in energy efficient and renewable technologies and alternative fuels. This funding, coupled with technical assistance, will allow for 70 new clean energy projects in national parks across the country. The partnership will install energy efficient lighting, ground-source heat pumps, solar water heating and electricity, and other efficient and renewable technologies at highly visible locations.

FEMP *renewed a partnership with the* **Park Service** *to* **invest $16 million** *in energy efficient and* **renewable technologies** *and* **alternative fuels.**

FEMP's *SAVEnergy* program helps Federal agencies identify energy efficiency and water conservation project opportunities by providing staff assistance and direct financing of audits. *SAVEnergy* supported the "Green Energy Parks Initiative" by funding 12 energy and water audits in FY 2000 to identify projects for national parks in the Mid-Atlantic, Northeast, and Western regions. The Department of Labor also partnered with FEMP to identify cost-effective projects at 15 of their Job Corps Centers, encompassing more than 2 million square feet of space.

FEMP's comprehensive *Design Assistance* program provides assistance to agencies for retrofits and new construction of Federal buildings. This program is particularly useful for buildings with unique energy challenges. For example, in Rodeo California, FEMP provided the seed money for a collaborative project with the United States Postal Service. Working with USPS, FEMP's technical team developed an innovative task lighting system for the mail sorting stations, which resulted in a 71 percent reduction in the total lighting load at the post office and will be implemented at other USPS facilities across the country.

In the Southeast and Western regions, FEMP is working closely with GSA on energy models for six courthouse designs. This year, for a courthouse in Miami, Florida, FEMP helped to identify design changes in glazing, chiller efficiency, lighting, and equipment power densities that are estimated to reduce the annual peak cooling demand from 1,800 tons to 1,200 tons.

In FY 2000, GSA and FEMP also dedicated the largest multi-celled thin-film solar power system in the country at GSA's Suitland, Maryland Federal Center. This 2,800 panel, 100 kW system was installed through FEMP's Renewables program as part of the President's Million Solar Roofs initiative, which has installed more than 100,000 solar roofs since 1997 – nearly double the original goal of 51,000 by 2000.

To keep government agencies at the forefront of technology, FEMP's *New Technology Demonstration*

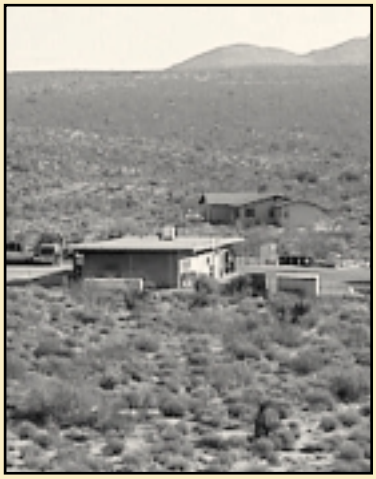
FEMP released a new Windows-based version of Building Life Cycle Costing software (BLCC 5), available on line at www.eren.doe.gov/femp.

Also new on the FEMP Web site is the Training Event Locator System, where energy managers can search by subject area and location to find courses dealing with energy efficiency, renewable energy, and water conservation from sources outside of FEMP.

program introduces new technologies to the Federal sector, empowering Federal agencies to assess and deploy new technologies tailored to meet their energy goals. In a broad range of reports, numbering 28 in FY 2000, the program evaluated diverse technologies from dual-source heat pumps to industrial boilers.

In addition to these specialized services, Federal employees can also take advantage of a variety of FEMP's high quality training programs. These include technical courses and workshops in areas such as project finance, design and screening, life cycle costing, and software tools. In FY 2000, over 5,200 attendees benefited from 55 workshops and symposia.

Deputy Secretary T.J. Glauthier announces $16 million in funding for the Green Energy Parks initiative, a joint venture between NPS and DOE.



Joshua Tree National Park's Cottonwood Campground area is now powered by a 20.5 kW PV array funded by the Green Energy Parks initiative.

Improved task lighting at the Rodeo, CA Post Office has increased worker productivity while reducing energy costs by 30%.

The Miami Courthouse design employs a curtain wall with large expanses of glass and high-performance window glazing.

OUTREACH

Leadership in a vast organization like the Federal government requires team building and outreach to ensure that vision and values are shared. It also requires a workforce that is knowledgeable about the methods and technologies that will help them achieve defined goals.

FEMP's outreach and partnering initiatives are also directed toward technology developers, manufacturers, trade associations and energy consulting firms, with the goal of building working teams for energy-efficiency and renewable energy projects, to increase the availability of energy saving technologies and products, and to encourage energy-wise behavior within the Federal government and beyond.

In 2000, FEMP:

- Published eight issues of the FEMP Focus newsletter, including special issues on electric system reliability and high natural gas prices as part of the new Lead By Example initiative.
- Held its annual conference, "Energy 2000," which was attended by more than 1,100 individuals from the U.S. and abroad.
- Broadcast FEMP's eighth teleconference training program, TeleFEMP VIII, "FEMP's Suite of Services," in May 2000 to 200 downlink sites nationwide.
- Realized 326,316 hits on its Web site in September 2000, an almost 23 percent increase from the same month in 1999.

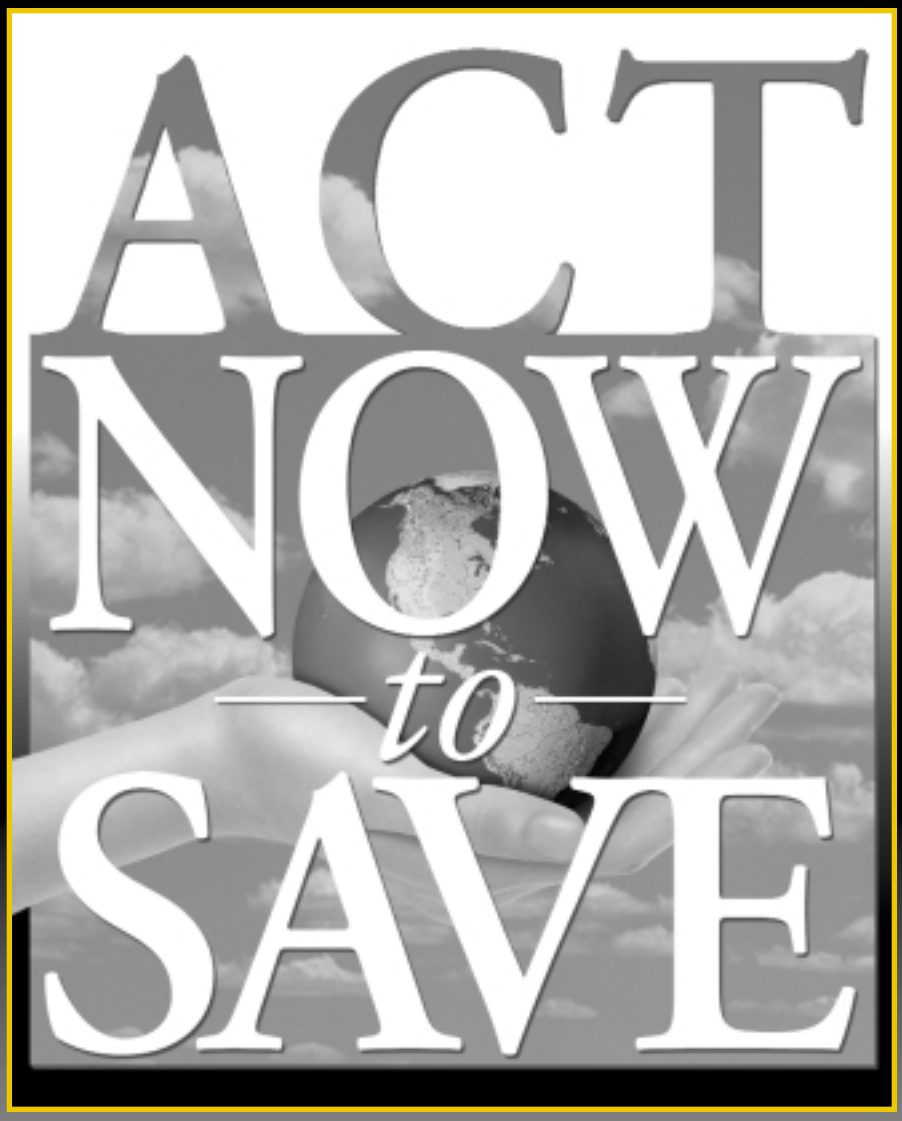
Mark Ginsberg (l), and David Leiter (r) present the Louis R. Harris, Jr. Award to Sam Grego of the U.S. Postal Service.

John Podesta, White House Chief of Staff, makes remarks at the first annual Presidential Awards for Energy Management Success. Seated from left to right are T.J. Glauthier, Deputy Secretary of Energy; Jacob Lew, Director of OMB; and Sylvia Mathews, Deputy Director of OMB.

Through its awards programs, FEMP also recognizes exemplary energy leadership and accomplishments of Federal employees in achieving energy-efficiency.

The new Presidential Awards for Energy Management Success, required by Executive Order 13123, were presented in FY 2000 for the first time. At the awards ceremony, four Federal agency energy management teams and more than 30 employee participants were honored.

FEMP also presented awards to 42 teams and individuals at DOE's Federal Energy and Water Management Awards ceremony. These award winners collectively saved the government more than $45 million by implementing energy and water savings projects at Federal facilities.


ACT
NOW
to
SAVE

United States Department of Energy
Office of Energy Efficiency and Renewable Energy
Federal Energy Management Program
www.eren.doe.gov/femp

For additional copies of this report, please call the FEMP Help Desk at
800-363-3732

February 2001