



# Conservation News

Volume 3, Number 3

*Conservation News is a quarterly publication of EPA's Facilities Management and Services Division (FMSD) Conservation Information Clearinghouse. FMSD established the Clearinghouse as a focal point for collecting and disseminating information about pollution prevention and energy and water conservation to serve all EPA facilities. The newsletter is intended to educate, inform, and help EPA staff involved in these efforts at EPA-owned or -leased facilities. We welcome your comments and suggestions. To receive additional copies of this newsletter, submit information for inclusion, or learn more, call the Clearinghouse Hotline at (202) 260-9803 or e-mail [p2group@epamail.epa.gov](mailto:p2group@epamail.epa.gov). You can also access the newsletter through the Internet at <http://www.epa.gov/consrv-news>. f*



## A Note From the Agency Conservation Coordinator

### SAVE MONEY AND ENERGY BY INTEGRATING UPGRADES

by Phil Wirdzek, FMSD

The federal government is facing increased demands for infrastructure improvements. Funding is being requested from facility managers for aging or failing equipment, from energy managers pushing for legislated or mandated reductions, and from environmental health and safety managers looking to improve worker safety and environmental compliance. The price tag for these needs is staggering; estimates range into the billions of dollars.

EPA is not immune from this situation. The Agency has been fortunate to be able to provide new space for most of its laboratories and program and regional offices. However, some of the Agency's facilities contain equipment and systems that are nearing the end of their useful lives, unacceptably inefficient, ripe for safety improvement, or environmentally problematic. Incremental funding leaves EPA with expensive maintenance costs and, oftentimes, less efficient systems. Unfortunately, the costs for replacements or upgrades are high, usually exceeding the annual building and facility budgets.

Is there a solution to this dilemma? Something that allows the Agency to "catch up," fund the big-ticket items that together will meet these various needs and last long enough so that the typical repair and improvement budget can carry EPA for a decade or two? Is there a safety valve? The answer to all of these questions is yes!

EPA's energy conservation philosophy is based on the belief that the Agency can cluster necessary equipment upgrades and match the service needs with advanced energy-efficient and energy-capturing technologies that are attractive for private investor financing. Under such a scheme, a private investor bank-rolls the capital costs to upgrade a facility, and the facility basically mortgages its utility savings to incrementally pay back the investor.

By bundling inefficiencies found in daily operations of aging equipment, more than enough utility savings will be realized to produce investments capable of overhauling most, if not all, heavy energy-using equipment in a laboratory. (Watch *Conservation News* for updates on investments in the 30-year-old Ann Arbor, Michigan, laboratory.) While providing new equipment and systems, these overhauls can reduce energy use and improve worker safety and environmental compliance.

To document these and other improvements, EPA is establishing a baseline set of activities within the site-specific pollution prevention plans developed in 1995 (see p. 4). The revised plans will show EPA's progress in conserving energy and effectively managing chemicals, solid waste, and hazardous waste to improve overall operations, prevent pollution, and offset funding demands.

Learn more about integrating laboratory energy upgrades and systems design through a training program, the first of which is being offered this fall (p. 2), new energy technology applications and partnerships (pp. 2-3), and planned conferences (p. 5). The events and projects highlighted in this newsletter show how energy conservation measures can result in big savings. f



## Opportunities for Integration

## LABORATORIES FOR THE 21<sup>st</sup> CENTURY

EPA's Office of Administration and the Department of Energy's Office of Federal Energy Management Programs (DOE's FEMP) are sponsoring a training program, "Laboratories for the 21st Century," on September 3-5, 1997, in Washington, DC. This course, which is expected to be offered regionally over the next year, will encourage the use of cost-effective, energy-efficient, and renewable design practices and principles for laboratory buildings.

As EPA and DOE have found, operating laboratories is as different from managing office buildings. Laboratory management considers multi-faceted environmental management scenarios that could dramatically affect the integrity of critical tests and experiments. In striving to meet energy-reduction goals while maintaining the mission of the laboratory, EPA recommends an integrated systems design approach that stresses correctly sizing equipment, identifying and capturing waste energy streams, implementing a full monitoring and control system, and using free and renewable energy whenever possible. These techniques have been successfully implemented at office buildings, and some of them may be applied to laboratories. The training program will explore technology system design and management strategies to balance energy efficiency with the ventilation, temperature, and humidity levels necessary to support critical laboratory activities.

The integrated systems design approach also provides a benefit in terms of streamlining funding requests. This approach encourages identifying all the energy improvement needs within the laboratory and addressing them as a comprehensive system. Therefore, federal laboratories faced with individual activities requiring funds, such as improving health and safety, repairing or replacing mechanical equipment, repairing facility envelopes, and phasing out equipment containing CFCs, can present these funding requests as a comprehensive energy-efficiency upgrade rather than as individual requests.

The training concludes with a half-day session set aside for consultations with the course instructors. The Agency encourages participants to introduce actual projects to allow for immediate application of course material. For further information on upcoming courses, please contact Ms. Maya Larson at (202) 737-1911. ✍



## Spotlight on Energy Efficiency

## ENERGY UPGRADE AT KERR LABORATORY, ADA, OKLAHOMA

The Robert S. Kerr Research Laboratory in Ada, Oklahoma, will soon undergo a comprehensive energy-efficiency upgrade, funded by an energy savings performance contract (ESPC). This ESPC will be the first contract in which EPA will participate in the area-wide service agreement between Oklahoma Gas and Electric (OG&E) and the government. Under this agreement, OG&E won the rights to provide comprehensive energy services, including ESPCs, for government facilities in their area. Because EPA was able to include the Kerr laboratory in this agreement, the time-consuming process of developing a request for proposals and bidding out the contract was avoided.

The laboratory, constructed in 1965 with a small addition in 1994, needs updating. Two of the three chillers are over 15 years old, the original boilers are in constant need of repair, and an old pneumatic controls system is now defunct. These factors make the facility a perfect candidate for a large-scale facility renovation and energy upgrade, the planned cornerstones of which are a ground source heat pump system and an integrated direct digital control (DDC) system for energy, fire, and security management. Ground source heat pumps use underground pipes to transfer heat between circulation water and the naturally constant temperature of the earth. The heat pump uses the pipes as a heat sink in the summer to cool the building, and as a heat source in the winter to heat the building. Ground source heat pumps have the advantage of lower operating and maintenance costs, and improved space conditioning control.

As a first step in implementing the upgrade, dataloggers were installed on August 13 at various locations in the facility to record energy consumption, air temperatures, humidity levels, boiler and chiller loads, and other parameters which will help determine the energy baseline. This information will assist EPA in evaluating the cost effectiveness of the technologies. Once the baseline has been determined, EPA will negotiate details with OG&E and their subsidiary, Geothermal Design and Engineering. The upgrade is expected to reduce the facility's energy consumption by as much as 50 percent. For more information on ground source heat pump technology, visit the DOE FEMP geothermal web page at <http://www.eren.doe.gov/femp/geoheat.html>, or the Geothermal Heat Pump Consortium web page at <http://www.ghpc.org/>.

## REGION VI SAVES PRECIOUS RESOURCES, WATER, MONEY, AND TREATMENT CHEMICALS

by Hadi Janbakhsh, FMSD

EPA's Region VI Laboratory located in Houston, Texas, incorporated a cooling tower condensate return system to reduce water consumption, reduce operating costs, and enhance environmental conditions. The technology delivers pure condensate water, generated from normal operations of an air handling unit at the laboratory, into a 300-gallon collection tank with a level control system, and then to the cooling tower sump. The average rate of condensate generated by the air handling unit is approximately 2.75 gallons per minute, 165 gallons per hour, 3,960 gallons per day, 118,800 gallons per month, or 831,600 gallons a year (rates assumed for typical weather conditions above 55 percent relative humidity, which occurs about seven months a year). Without this cooling tower condensate return system, these large volumes of water would have to be supplied by the local water utility.

This technology saves money spent on city water. Because the condensate is free of dissolved solids and minerals, the system reduces cooling tower blowdown, curtailing water treatment chemicals lost in this process as well as its introduction to the sanitary sewer system. The condensate also enters the cooling tower with heat already removed, thus indirectly reducing the demand of the tower fan operation.

This is a perfect example of a project that reaches across several different programs: pollution prevention, water conservation, and energy conservation. Congratulations to the team at the Houston laboratory and Headquarters for making this project happen! ⚡

### REMINDER!

#### NATIONWIDE OA CONFERENCE PLANNED FOR SEPTEMBER 1997

The Office of Administration is planning a conference to bring together EPA's managers and staff to discuss issues of facility operations, including health and safety, pollution prevention, energy and water conservation, security, master planning, working capital, telecommunications, transfer of property, and much more.

Date: September 16, 17, and 18  
Location: Denver, Colorado

## QUARTERLY ENERGY AND WATER CONSUMPTION REPORT

The Office of Administration and Resources Management wants to thank the energy managers who have submitted their quarterly consumption data. However, a number of facilities still need to report their information. Remember that September 30 marks the end of the fourth quarter for FY97. With this date fast approaching, prompt and accurate energy consumption reporting is needed so we can produce EPA's Annual Report to the Department of Energy on the progress of the energy and water conservation program. The following table highlights the FY97 energy and water consumption data that has been received to date. If you believe there is an error in the table or want to submit data, please call the Clearinghouse at (202) 260-9803. ⚡

Facility	1st Quarter		2nd Quarter		3rd Quarter	
	Energy	Water	Energy	Water	Energy	Water
Ada, Oklahoma	⚡	💧	⚡	💧		
Ann Arbor, Michigan	⚡	💧	⚡	💧		
Athens, Georgia	⚡	💧	⚡	💧	⚡	💧
Cincinnati, Ohio	⚡	💧	⚡	💧		
Corvallis, Oregon	⚡	💧	⚡	💧	⚡	💧
Duluth, Minnesota	⚡	💧	⚡	💧	⚡	💧
Edison, New Jersey	⚡	💧	⚡	💧	⚡	💧
Gulf Breeze, Florida	⚡	💧	⚡	💧	⚡	💧
Houston, Texas						
Las Vegas, Nevada	⚡	💧	⚡	💧	⚡	💧
Manchester, Washington	⚡	💧				
Montgomery, Alabama						
Narragansett, Rhode Island	⚡	💧	⚡	💧	⚡	💧
Newport, Oregon	⚡	💧	⚡	💧	⚡	💧
Richmond, California	⚡	💧	⚡	💧		
RTP, North Carolina	⚡	💧	⚡	💧		



## Pollution Prevention Update

### EPA TO UPDATE POLLUTION PREVENTION PLANS

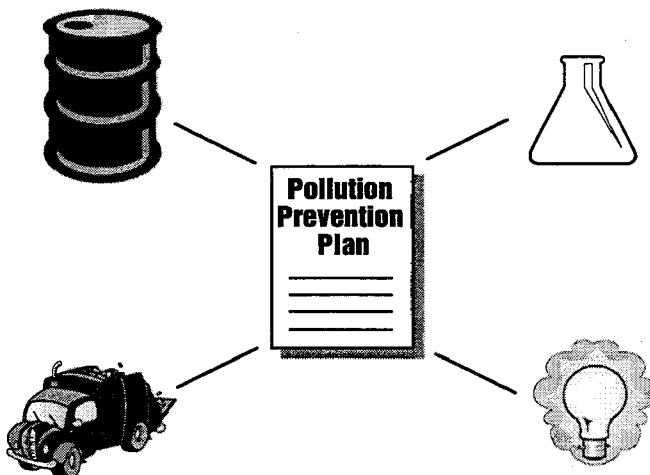
To document facilities' progress in preventing pollution, OA's Pollution Prevention Steering Committee is revising the site-specific plans developed in 1995 by collecting data on a baseline set of activities and measuring pollution reduction goals consistently across the Agency. The baseline set of activities pertain to the most significant areas of waste generation within typical EPA operations:

- Hazardous waste
- Solid waste
- Chemical management
- Energy conservation.

An easy-to-follow form will be used to update the pollution prevention plans to include this baseline set of activities and lead facilities through the data gathering process. For example, under hazardous waste, several data points are requested, such as the amount of solvents, paints, and batteries procured, recycled, or disposed. Units, such as gallons or pounds, are specified for each data element. Some facilities may not have the information available the first year. These facilities can establish appropriate tracking systems to ensure that data is collected for future reports.

OA's Pollution Prevention Steering Committee is using calendar year 1996 as a baseline year for gathering this data. Similar data will be gathered annually to enable EPA to quantify its pollution prevention successes relative to these baseline activities, and to set reduction goals.

A training session on revising the pollution prevention plans will be part of OA's September conference in Denver, CO. Guidance materials on the baseline set of activities and one-on-one technical support will be distributed during and after the conference. For more information, e-mail OA's Pollution Prevention Steering Committee at [p2group@epamail.epa.gov](mailto:p2group@epamail.epa.gov).



### CALL FOR SUCCESS STORIES

In preparation for EPA's FY 1997 Report to DOE describing the progress of the Agency's energy and water conservation program, we are requesting that each facility submit its energy and water conservation and pollution reduction success stories. These stories are important in illustrating the Agency's efforts toward reaching the 20 percent reduction goal.



You can find last year's annual report by pointing your web browser to <http://www.epa.gov/oaintntrnt/intrnlp2/energy/doe96.htm>. As you will see, facility-specific projects are a significant component of the report. To ensure that the report is as complete and accurate as possible, this year we would like you to submit information about your energy conservation program. Projects may range from simple measures that have been implemented to complex mechanical system upgrade projects (planned and actual) — all are important to the success of the Agency's conservation program.

Please submit all information to Phil Wirdzek by e-mail ([wirdzek.phil@epamail.epa.gov](mailto:wirdzek.phil@epamail.epa.gov)) or fax (202) 260-8234 by October 1. Call the Clearinghouse at (202) 260-9803 if you have any questions. We look forward to hearing from you!



## Resources

*If you come across an interesting or informative web site, let us know the URL by e-mailing [p2group@epamail.epa.gov](mailto:p2group@epamail.epa.gov).*

### FOUND IT ON THE WEB...

The National Park Service has developed a guidebook that emphasizes environmental sensitivity when constructing facilities. "Guiding Principles of Sustainable Design" discusses the use of non-toxic materials, resource conservation, recycling, and integration of tourism with natural and cultural settings. Visit NPS's web site for Facility Planning, Design and Construction at <http://www.nps.gov/dsc/dsgncnstr/> to access the guide.

### FIND ENERGY STAR SITES EASIER

The Energy Star Home Page has made a few minor revisions to make your browsing a little easier. The following URLs have been established:

**Energy Star home page**

<http://www.epa.gov/energystar>

**Green Lights home page**

<http://www.epa.gov/greenlights>

**Energy Star Homes**

<http://www.epa.gov/homes>

**Energy Star Buildings**

<http://www.epa.gov/buildings>

**Energy Star Office Equipment**

<http://www.epa.gov/office>

<http://www.epa.gov/computers>

<http://www.epa.gov/printers>

<http://www.epa.gov/faxes>

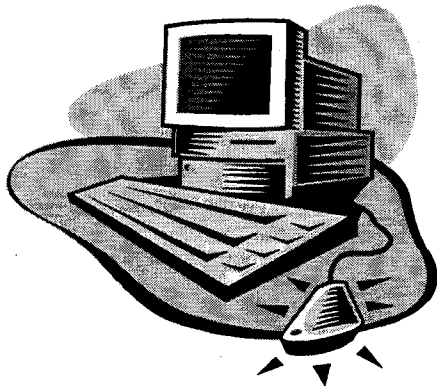
<http://www.epa.gov/monitors>

<http://www.epa.gov/copiers>

**Energy Star HVAC**

<http://www.epa.gov/homecooling>

<http://www.epa.gov/homeheating>



## EARTH'S 911 FOR THE ENVIRONMENT

The Environmental/Recycling Hotline, dubbed the "Earth's 911 for the Environment," is a public/private partnership between EPA, the U.S. Postal Service, and several private-sector businesses. A state-of-the-art computerized, interactive phone and Internet system, the Environmental/Recycling Hotline is expanding nationwide to allow everyone in the U.S. to have access to environmental and recycling information. The Hotline's mission is to provide geographically specific environmental and recycling information at no cost. Through a single 800 number, callers can access several sections of information, including the nearest recycling center. By calling (800) CLEANUP or accessing the Hotline's web site at <http://www.1800cleanup.org> and entering a zip code, callers can determine the nearest recycling center for up to 15 different types of recyclable materials. Callers can also obtain other environmental information, including educational materials on reducing, reusing, recycling, managing household hazardous waste, and buying recycled-content products.

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## OCTOBER IS ENERGY AWARENESS MONTH!

We are currently developing a package of energy awareness information that will be sent to facility managers at the end of September. This year we are compiling materials that clearly show the environmental impact of energy conservation and provide daily reminders of energy conservation opportunities. These materials will assist energy managers with their facility-specific conservation programs. Facility managers are encouraged to identify an employee or group of employees to help disseminate information at the beginning of October, and to help implement simple energy conservation measures throughout the year. ♣



## Conservation Calendar

*If you have questions about the activities below or want to publicize an event, call the Clearinghouse at (202) 260-9803.*

### SEPTEMBER

- 3-5 Laboratories for the 21st Century, Washington, DC<sup>1</sup>
- 9-10 Implementing Renewable Energy Projects, Sacramento, CA<sup>2</sup>
- 16-18 Federal Relighting Initiative, Irwindale, CA<sup>2</sup>
- 23-24 Federal Energy Management Overview, Atlanta, GA<sup>2</sup>
- 25 Energy-Efficient Products, Atlanta, GA<sup>3</sup>
- 29-30 Fundamentals of Energy Management (Certified Energy Manager (CEM) Seminar), Chicago, IL<sup>4</sup>

### OCTOBER

- 1 CEM Exam, Chicago, IL<sup>5</sup>
- 1 Green Lights Lighting Upgrade Workshop, Houston TX\*
- 15 Green Lights Lighting Upgrade Workshop, White Plains, NY\*
- TBD Green Lights Lighting Upgrade Workshop, San Francisco, CA\*
- 20-24 Training Program for Energy Managers (CEM Seminar), Washington, DC<sup>4</sup>
- 24 CEM Exam, Washington, DC<sup>5</sup>

### NOVEMBER

- 6-8 World Energy Engineering Congress Conference, Atlanta, GA<sup>6</sup>

### DECEMBER

- 8-12 Training Program for Energy Managers (CEM Seminar), San Francisco, CA<sup>4</sup>
- 11-12 Energy Management Congress Conference, Anaheim, CA<sup>6</sup>
- 11-12 Fundamentals of Energy Management (CEM Seminar), Orlando, FL<sup>4</sup>
- 12 CEM Exam, San Francisco, CA<sup>5</sup>
- 13 CEM Exam, Orlando, FL<sup>5</sup>

<sup>1</sup> Maya Larson (202) 628-8498

<sup>2</sup> Karen Kimball (202) 737-1991

<sup>3</sup> Katie Kroehle (202) 586-1677

<sup>4</sup> Association of Energy Engineers, Seminar Registration (770) 925-9633

<sup>5</sup> Association of Energy Engineers, CEM Exam Registration (770) 447-5083 ext. 218

<sup>6</sup> Ted Collins (202) 586-8017

\* These are the last Lighting Upgrade Workshops that will be offered. For more information please call the Green Lights and Energy Star Buildings Hotline at 1-888-STAR-YES.

## ALSO COMING UP...

--> OA's Pollution Prevention Steering Committee is hosting a **benchmarking conference** in Washington, DC, on November 5-6 to share success stories and exchange information. Several private laboratories and academic experts have expressed interest in attending, and an invitation to potential benchmarking partners is expected to be sent in the near future. For more information, please contact the committee at [p2group@epamail.epa.gov](mailto:p2group@epamail.epa.gov), or call Steve Zeigler at (202) 260-2030.

--> New **pollution prevention opportunity pamphlets** on chemical management, solvents, and environmentally preferable cleaning products will be distributed at the upcoming OA Conference in Denver. The pamphlets present how EPA facilities can implement projects on these topics. If you would like copies, please contact us at [p2group@epamail.epa.gov](mailto:p2group@epamail.epa.gov) or point your web browser to <http://www.epa.gov/oaintmt/>.

--> The National Marketplace for the Environment, a major conference and trade show to be held in Washington, DC, on November 18-20, will give acquisition professionals an opportunity to see how environmentally preferable procurement can increase efficiency, lower costs, and prevent pollution. It will showcase key government programs in transportation, energy, agriculture, renewable resources, pollution prevention, and environmental exports. The event is sponsored by the Departments of Energy and Agriculture, the Association of Counties, and the U.S. Conference of Mayors. Also participating are the General Services Administration, EPA, and the Departments of Defense and Commerce. For more information, call (818) 906-2700 or (800) 334-EXPO, or e-mail [ecoexpo@aol.com](mailto:ecoexpo@aol.com) or check out the web site, <http://www.ecoexpo.com>.