Fluorescent Lamp Recycling

10 Steps to Implementing a Fluorescent Lamp Recycling Program

Hospitals operate all day, every day, year round. Fluorescent lamps can help hospitals significantly reduce their energy consumption. They use one quarter the energy of incandescent lamps and last as much as ten times longer. However, fluorescent lamps contain the toxic element mercury. When broken or improperly disposed of, fluorescent lamps may release mercury into the air, water and soil, and thus pose a threat to human health and the environment. While fluorescent lamps offer tremendous environmental advantages through energy savings, the disposal of used fluorescent lighting raises serious environmental concerns. Recycling spent mercury-containing lamps offers an environmentally sound alternative to expensive hazardous waste disposal. Recycling used fluorescent lamps is a good way to eliminate mercury emissions, as well as reduce waste and other toxic material disposal. To help you get started, H2E recommends the following 10-step process:

Step 1: Assess Your Facility

Completing a facility assessment is a fundamental step in launching your program. Gathering the appropriate information will help you measure dollar savings over time. Answer the following questions to assess your situation:

- How many fluorescent lamps are in your facility? Where are they located?
- How often do you change your fluorescent lamps?
- How many fluorescent lamps are you disposing of each month? Each year?
- What type of fluorescent lamps are you purchasing? Are they highly energy-efficient lamps?
- How are you handling and storing the spent lamps?
- Do all employees know what to do when a fluorescent light bulb burns out or breaks?
- Are you in compliance with local, state and federal hazardous waste regulations?

Step 2: Develop a Purchasing Plan

What type of lamps are you purchasing? Ideally you should purchase lamps that are both highly efficient and have low mercury content. It is important to buy high efficiency bulbs (longer lamp life) because they do not need to be replaced as often, save labor and recycling costs, and use less energy. Energy-efficiency is key not only in saving energy costs, but also because most hospitals derive their electric power from coal-fired power plants, which are the leading source of mercury to air, as mercury is a byproduct of burning coal.

- Check out INFORM's factsheet, *The Lowdown on Mercury in Fluorescent Lamps* at www.informinc.org/fact_P3fluorescentlamps.php

Step 3: Select a Recycler

Currently, there are more than 40 lamp-recycling companies in the United States.

- Audit your vendor. Make sure their permits, recycling technologies, transportation operations, and bookkeeping practices meet all state and federal regulations as well as fit your lamp recycling needs.

Hospitals for a Healthy Environment™

- Ask about what processes they use to reclaim the mercury and whether they retort (reclaim) the mercury on-site or whether they ship it to another contractor for processing. Some recyclers may charge extra if they ship it off site.
- Ask about protocol for broken lamps - they are often more expensive to manage and require special handling.
- Prices vary, depending on quantities and whether transportation is included. Compare prices and call several different recyclers to get price estimates for your facility.
- Some recyclers also manage other universal wastes such as batteries. Ask the vendors what other services they provide.

Tools:

List of Mercury Recyclers:
H2E (http://www.h2e-online.org/tools/hg-recy.htm),
National Electrical Manufacturer's Assoc. (http://www.nema.org/lamprecycle/recyclers.html)

Step 4: Establish a Process for Managing Used Lamps

- Designate an area within your facility to store lamps. Bigger facilities may need more than one location for easier access.
- Make sure employees know whom to call if they see that a lamp is burned out.
- Consider relamping areas in bulk. Rather than replacing individual lamps when they fail, relamp entire rooms or floors at the same time. This will permit easier collection and shipping of lamps to a recycling facility. But make sure you're getting the maximum amount of life from the lamps in the area before you relamp.

Step 5: Safely Handle and Store Spent Lamps

Prevent exposure, save money disposing of higher-cost broken lamps and prevent breakage by storing and packing lamps safely.

- Storage Option 1: Put used lamps in original boxes, with no packing material. Make sure you completely seal the box to prevent leaks from bulb breakage. If you are combining used lamps with new ones, mark the used with a piece of tape or a permanent marker (be sure tape or marker is located next to receptacle).
- Storage Option 2: You can also purchase specially made lamp containers for used lamp storage. These containers are often reusable, very durable and won't tip over easily. Your lamp recycler may have a container that they like to use to make shipping or pick-up easier.
- Never leave spent lamps unattended or in a compromising position (leaning against a wall or in an area where they can be easily broken).
- Do not tape lamps together.
- Store boxes/containers in a dry place.
- Remember: Lamps contain mercury and are therefore technically still hazardous waste, despite their exemption under the Universal Waste Rule. Follow OSHA regulations.
- If possible, stack boxes/containers neatly on pallets and shrink-wrap them.
- Clearly identify containers of used lamps. For example, "used fluorescent lamps for recycling." and the accumulation start date. You cannot store the used bulbs for longer than one year.
- Although some states still allow certain low mercury fluorescent lamps to be landfilled, H2E discourages this practice, as even small amounts of mercury in the environment can have a significant impact. All mercury-containing fluorescent lamps should be sent for recycling.

Step 6: Properly Manage Broken Lamps

- Create procedures for reporting and managing broken lamps.
- Protect lamps from breakage. Remove lamps carefully and store used lamps in a location and manner that will prevent breakage. Some lamp recyclers will supply boxes for storage. Never break or crush lamps to consolidate, because mercury will be released.

- If lamps are accidentally broken, isolate the area and call for proper clean-up. For accidental releases, use the resources at http://www.epa.gov/epahome/emergenc.htm for more information on handling tube breakage.
- Keep broken lamps in a secure location away from patents and staff, separate from the intact tubes.
- Broken tubes can be recycled so DO NOT throw them in the trash.
- Remember: Broken lamps contain mercury and may present health hazards. Follow OSHA and EPA regulations when managing broken lamps.

Step 7: Get Lamps to the Recycler

- To recycle lamps, there are several options. Small quantity generators may actually mail-in lamps but most hospitals generate a larger quantity than is practical for mailing. Most recyclers that accept mail-in lamps will provide 4-foot or 8-foot containers that you can send via UPS.
- To transport lamps in states that have adopted the Universal Waste Rule, a bill of lading and a label with "Used Lamp(s)" on the outside of the container is required.
- For more information on the Universal Waste Rule refer to 40 CFR 273 and http://www.epa.gov/epaoswer/hazwaste/id/univwast.htm

Step 8: Educate Employees

- Inform your employees about the dangers of mercury in fluorescent lamps and of your decision to recycle all fluorescent lamps. This effort is key to reducing mercury-containing waste in your facility and contributes to H2E's goal to virtually eliminate mercury-containing waste by 2005.
- All employees and contractors should be properly educated and trained to handle and "dispose/recycle" fluorescent lamps to minimize accidental disposal into the landfill or hazardous materials waste-stream. Remember: fluorescent lamps are not labeled hazardous waste if they are recycled.

Step 9: Record and Track Data

The best way to establish and gauge success of your fluorescent lamp recycling program is to keep track of how many containers you ship for recycling and how many lamps are in each container.

- Each month ask for paper work from your recycler to find out how many of your lamps they retorted and how much mercury they reclaimed and how much it costs. Use this data to demonstrate good compliance and a successful program to management.
- Success in lamp recycling is simple to attain. If you're recycling all your lamps, you are successfully preventing mercury from entering into and damaging the environment AND you're avoiding the costs and hassle of hazardous waste rules and regulations.

Step10: Problems? Use the Resources Available to You.

- Contact H2E for helpful tips: h2e@h2e-online.org, or 1-800-727-4179
- Use the H2E website, www.h2e-online.org for helpful tips.
- For more information on the Universal Waste Rule refer to 40 CFR 273 and http://www.epa.gov/epaoswer/hazwaste/id/univwast.htm
- Use the H2E listserv to find out what other H2E Partners are doing to recycle their fluorescent lamps.
- Ask your recycling vendor.
- Ask local, state and federal environmental officials.
- For accidental releases, use the resources at http://www.epa.gov/epahome/emergenc.htm

For More
Information Contact:

H2E
P.O. Box 53315
Washington, DC 20009
Ph: 800-727-4179
e-mail: h2e@h2e-online.org
www.h2e-online.org

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on 100% Postconsumer, Process Chlorine Free Recycled Paper