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Halifax Regional Council
May 29, 2007

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY:

A handwritten signature in black ink, appearing to read "Jim Bauld".

Jim Bauld, Acting Director, Environmental Management Services

DATE: May 17, 2007

SUBJECT: CFLs - Mercury Disposal - Banning of Incandescent Light Bulbs

INFORMATION REPORT

ORIGIN

At the May 1, 2007 meeting of Regional Council, precipitated by the recent Federal government announcement banning the sale of incandescent light bulbs within five years, it was approved for staff to provide a report detailing measures that could be put in place by the HRM to ensure the safe disposal of mercury from compact fluorescent lights (CFLs). This staff report highlights the existing Federal and Provincial policy pertaining to CFLs, and a potential future best management practice.

BACKGROUND

The premise of the recent Federal and Provincial announcement banning the sale of incandescent lights in five years, and the promotion of CFLs, is to reduce energy use, thereby reducing green house gas emissions which contribute to global warming. Lighting can account up to 20% of the average home's electrical bill. Each CFL contains approximately 5 milligrams of mercury. Attachment # 1, is a Frequently Asked Question - Information on Proper Disposal of Compact Fluorescent Light Bulbs' (CFLs) document issued by the US Environmental Protection Agency.

The NS Department of Environment & Labour (NSEL) has advised that there is no specific provincial policy for the disposal of CFLs, as the Federal government has not designated CFLs as waste dangerous goods (i.e. hazardous waste). NSEL advises that the best management practice for CFLs is to:

- take used CFLs to your local municipal hazardous waste facility; or
- if your local municipality does not accept CFLs at their hazardous waste facility, CFLs are to be placed in a sealed bag, which is to be placed in a refuse bag, for disposal at the local landfill.

Residents who contact the HRM are advised, through the 490-4000 Corporate Call Centre, to place their CFLs in a sealed bag, then place inside a refuse bag for collection on refuse week.

The permit issued by NSEL for HRM's Household Hazardous Waste facility, prohibits the receipt of any goods, or material from a non residential property - including light bulbs. One company, listed in the local telephone directory, accepts and extracts mercury from fluorescent lights - which historically have been almost exclusively from office and large retail buildings.

DISCUSSION

Although the purchase of CFLs is being heavily promoted by the Province and the Federal government, neither has developed a stewardship program with the industry (manufacturer, distributor or retailer) for the recovery of used CFLs - to ensure that the mercury is kept out of municipal landfills. The Province has commenced discussions with three major manufacturers of CFLs, to identify future best management practices

The introduction of CFLs has not only raised issues relating to mercury and best management practises, but also the question of who should bear the cost of the end-of-life management of CFLs. Historically, when a new product is introduced, the manufacturer, distributor, and retailer, assumes that the local landfill, i.e. municipality, will accept the product - and bear all associated costs.

The introduction and promotion of the use of CFLs at residential properties, once again places the HRM (and all municipalities) at risk for the management and associated costs of a used product, which could be substantial, should CFLs in the future be designated as a waste dangerous goods.

The Province has embarked upon an initiative of implementing a take-back/recovery program for used electronic products, e.g. Computers, TVs, VCRs, etc., which, if similar to other programs in Canada and the USA, the cost of which would be recovered at the time of purchase of the item, and not at the cost of the municipality. Proposals from the electronics industry are scheduled to be presented to the Province by early fall. Subject to review and approval, the Province will announce the date for an electronic waste recovery program - commencing in 2008.

HRM staff has had preliminary discussions with the Province suggesting that CFLs be included in the new electronic waste recovery program. Many electronic products contain precious and heavy metals, which is the rationale for recovery and reuse - rather than disposal.

The public and media response to the Federal and Provincial announcement and promotion of the use of CFLs at residential properties, has raised many questions which both senior levels of government are assessing.

HRM staff will closely monitor the developments pertaining to a CFL program for residential use and will provide a future report to Regional Council.

BUDGET IMPLICATIONS

None

FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

ATTACHMENTS

1. US EPA Frequently Asked Questions Information on Proper Disposal of Compact Fluorescent Light Bulbs (CFLs)

A copy of this report can be obtained online at <http://www.halifax.ca/council/agendasc/cagenda.html> then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by : Jim Bauld, Manager, Solid Waste Resources 490-6606



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Frequently Asked Questions Information on Proper Disposal of Compact Fluorescent Light Bulbs (CFLs)

Does EPA recommend the use of CFLs?

Yes. CFLs, when compared with standard incandescent bulbs, offer many benefits. First, they help save energy and money. They use 2/3 less energy than standard incandescent light bulbs, and last up to 10 times longer. Replacing a 60-watt incandescent with a 13-watt CFL can save you at least \$30 in energy costs over the life of the bulb. Second, CFLs offer convenience, because they last longer, and come in different sizes and shapes to fit almost any fixture. In addition, CFLs produce about 70% less heat than standard incandescent bulbs, so they're safer to operate and can help cut energy costs associated with home cooling. When shopping, always look for ENERGY STAR qualified CFLs.

Is it true that CFLs contain mercury? Why and how much?

CFLs contain a very small amount of mercury sealed within the glass tubing – an average of 5 milligrams (roughly equivalent to the tip of a ball-point pen). Mercury is an essential, irreplaceable element in CFLs and is what allows the bulb to be an efficient light source. By comparison, older home thermometers contain 500 milligrams of mercury and many manual thermostats contain up to 3000 milligrams. It would take between 100 and 600 CFLs to equal those amounts.

There is currently no substitute for mercury in CFLs; however, manufacturers have taken significant steps to reduce mercury used in their fluorescent lighting products over the past decade.

Should I be concerned about using CFLs in my home, or should I take any special precautions?

CFLs are safe to use in your home. No mercury is released when the bulbs are in use and they pose no danger to you or your family when used properly. However, CFLs are made of glass tubing and can break if dropped or roughly handled. Be careful when removing the lamp from its packaging, installing it, or replacing it. Always screw and unscrew the lamp by its base, and never forcefully twist the CFL into a light socket by its tubes. Used CFLs should be disposed of properly using the guidance below.

What should I do with a CFL when it burns out?

Follow these guidelines to dispose your CFL properly:

- Like paint, batteries, thermostats, and other hazardous household items, CFLs should be disposed of properly. Do not throw CFLs away in your household garbage if better disposal options exist. To find out what to do first check the following website: www.earth911.org where you can find disposal options by using your zip code (*see detailed instructions at the end of this document) or by calling 1-877-

EARTH911 for local disposal options. Another option is to check directly with your local waste management agency for recycling options and disposal guidelines in your community. Additional information is available at www.lamprecycle.org. Finally, IKEA stores take back used CFLs, and other retailers are currently exploring take-back programs.

- If your local waste management agency offers no other disposal options except your household garbage, place the CFL in a plastic bag and seal it before putting it in the trash. If your waste agency incinerates its garbage, you should search a wider geographic area for proper disposal options. Never send a CFL or other mercury-containing product to an incinerator.
- ENERGY STAR qualified CFLs have a two-year warranty. If the bulb fails within the warranty period, return it to your retailer.

What should I do if a CFL breaks?

Because there is such a small amount of mercury in CFLs, your greatest risk if a bulb breaks is getting cut from glass shards. Research indicates that there is no immediate health risk to you or your family should a bulb break and it's cleaned up properly. You can minimize any risks by following these proper clean-up and disposal guidelines:

- Sweep up—don't vacuum—all of the glass fragments and fine particles.
- Place broken pieces in a sealed plastic bag and wipe the area with a damp paper towel to pick up any stray shards of glass or fine particles. Put the used towel in the plastic bag as well.
- If weather permits, open windows to allow the room to ventilate.

What is mercury, what are the sources of mercury emissions, and what are the risks?

Mercury is an element (Hg on the periodic table) found naturally in the environment. Mercury emissions in the air can come from both natural and man-made sources. Utility power plants (mainly coal-fired) are the primary man-made source, as mercury that naturally exists in coal is released into the air when coal is burned to make electricity. Coal-fired power generation accounts for roughly 40% of the mercury emissions in the U.S. EPA is implementing policies to reduce airborne mercury emissions. Under regulations issued in 2005, coal-fired power plants will need to reduce their emissions by 70 percent by 2018.

CFLs present an opportunity to prevent mercury emissions from entering the environment because they help to reduce emissions from coal-fired power plants. A coal-fired power plant will emit 13.6 milligrams of mercury to produce electricity required to use an incandescent light bulb, compared to 3.3 milligrams for a CFL.

Even in areas without significant coal-fired power generation as part of the electricity mix (e.g., Alaska and the Pacific Northwest), there are other, equally positive environmental

impacts from saving energy through the use of CFLs: reduction of nitrogen oxides (which cause smog), and prevention of substantial quantities of CO₂, a greenhouse gas (which is linked to global warming), as well as other air pollutants.

Airborne mercury poses a very low risk of exposure. However, when mercury emissions deposit into lakes and oceans, they can transform into a highly toxic form that builds up in fish. Fish consumption is the most common pathway for human exposure to mercury. Pregnant women and young children are most vulnerable to the effects of this type of mercury exposure. The Food and Drug Administration (FDA) estimates that most people are not exposed to harmful levels of mercury through fish consumption. However, the FDA and state agencies do issue public health advisories.

EPA offers additional information and resources on all sources of mercury at www.epa.gov/mercury.

* Detailed instructions for navigating the EARTH 911 site

First, go to the yellow box in the upper left corner and put in your zip code; next, in the upper left corner click on "household hazardous waste"; finally, go to the center of the new page, household hazardous waste section, and click on "fluorescent bulbs."

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