THE CORPORATION OF THE DISTRICT OF BURNABY

ENVIRONMENT & WASTE MANAGEMENT COMMITTEE

HIS WORSHIP, THE MAYOR
AND ALDERMEN

RE: PROPOSAL FOR A HOUSEHOLD BATTERY COLLECTION

RECOMMENDATION:

1. THAT Council proceed with the development of a Household Battery Collection Project as outlined in this report.

REPORT

The Chief Public Health Inspector provided the following report to the Environment and Waste Management Committee at its meeting of 1990 March 13:

"1.0 THE NEED FOR A HOUSEHOLD BATTERY COLLECTION PROJECT:

With the construction of the G.V.R.D. Refuse Incinerator there is a growing concern over the amount of potentially hazardous materials found in the residential refuse waste stream. Household batteries are but one category of these potential hazards that are routinely discarded into our residential refuse disposal system.

Various household batteries are undesirable in the waste stream because they contain heavy metals and chemicals that can be environmentally harmful and injurious to humans. These substances can enter the environment as leachate from landfills or via incinerator emissions. Many heavy metals such as mercury, lead, copper, zinc, cadmium, manganese, nickel and lithium make up some of the components of household batteries.

Mercury and mercury compounds are highly toxic to people and animals. Some of the health problems associated with mercury are mental and motor disorders, kidney damage, pulmonary damage and genetic disorders. High levels of cadmium have been linked to prostate cancer along with liver and lung disease. Inhalation of manganese dioxide (contained in spent alkaline-manganese dry cells) can cause manganese poisoning or manganese pneumonia. Lead poisoning can lead to brain damage, and interferes with the ability to resist infections.

It is interesting to note that almost half of all the mercury used in industry in the United States is used in the production of batteries. Rechargeable batteries contain high levels of cadmium, accounting for 22 percent of the cadmium consumed in the United States.

Excluding household batteries from our municipal solid waste would have a major impact on the amount of mercury, cadmium, and to a lesser extent, lead, in the emissions and ash residues generated by the G.V.R.D. Refuse Incinerator Plant.

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2.0 DESCRIPTION OF HOUSEHOLD BATTERIES:

Batteries are classified into two categories, primary and secondary batteries. Primary batteries may be fully discharged only once because the active chemicals that produce the energy are used up. Once these batteries are discharged, most often they are discarded into the waste stream.

Secondary batteries may be used repeatedly because the chemical reaction that creates the energy can be reversed, thus the battery becomes recharged.

Typical household batteries are:

Carbon - Zinc
- general purpose, heavy duty household battery
- relatively inexpensive
- loses charge more quickly than others

Alkaline
- most commonly used
- more expensive than carbon-zinc but lasts longer

Mercury Oxide
- button size
- used for hearing aids, watches, pocket calculators

Silver Oxide
- same uses and rapidly replacing mercury oxide

Zinc Air
- same uses as mercury oxide

Lithium
- expensive but very long life (up to 10 years)
- relatively new on market
- substitute for mercury oxide and in some cases alkaline
- used for pacemakers, thin watches, hearing aids etc.

Nickel Cadmium
- rechargeable
- initial higher cost but reusable
- substitute for conventional batteries
- frequently sealed in rechargeable appliances
- use is increasing steadily

Carbon/zinc and alkaline batteries have the biggest share of the household battery market, although the use of carbon/zinc batteries is declining and alkaline battery use in increasing.

3.0 HOUSEHOLD BATTERY COLLECTION PROJECT:

Environmental Health Division staff have reviewed a number of Household Battery Collection Projects and have determined that similar projects could easily be structured for our Municipality.

The existing Household Battery Collection Projects are basically a collection system that is structured in retail stores that sell dry cell batteries. The Projects target batteries used in flashlights, radios, toys, cameras and hearing aids.

The common process is for the sponsoring Government body to provide retail stores with five quart buckets with a battery recycling logo. The buckets are located adjacent to battery displays and consumers are encouraged to return used batteries to the buckets. The collected buckets are then stored in 55 gallon drums and when full, collected by Government officials or a Waste Disposal Company under contract.

Almost all the programs are basically collection of batteries only. In British Columbia there are no facilities to recycle or dispose of household batteries.

4.0 HOUSEHOLD BATTERY COLLECTION PROJECT PROPOSAL:

Recognizing the urgency in removing household hazardous wastes from our residential waste stream, the Environmental Health Division is recommending a special project for the collection of household batteries. The project would be reviewed after one year of operation to determine if it is a sustainable program.

Project Details:

With the support of local retail merchants, provide five quart buckets to retail merchants and 75 gallon plastic storage drums to the Municipality's shopping centers. When the 75 gallon storage drums are full, municipal staff would pick up the drums and provide a replacement. We would ask participating merchants that are not located in a shopping mall to deposit collected batteries at the Municipal Recycling Centre.

All buckets and storage drums would have a label identifying the Municipal Household Battery Collection Project.

Projected Costs:

Item	Quantity	Cost
75 gallon drums	25	$ 5,000
5 gallon collection containers	75	$ 3,000
labels, advertising		$ 7,000
Total Projected Costs		$15,000

Timing of Project:

It is recommended that the commencement of the Household Battery Collection Program be targeted for National Environment Week, at the beginning of June.

5.0 REMAINING TASKS:

Should the Environment & Waste Management Committee agree with the proposed project, following are the remaining tasks which would be conducted prior to the next meeting of the Committee.

A. Contacting the following shopping malls and major retail outlets and determining if they are willing to participate in the project:

Brentwood	Old Orchard
Eatons Centre	I.G.A.
Station Square	Kensington Shopping Centre
Lougheed Mall	London Drugs
Safeway	Canadian Tire

In addition, staff will contact the Burnaby General Hospital and Adult Community Care Facilities.

B. Preparing a letter to the Provincial Minister of Environment from the Chairman of the Environment & Waste Management Committee asking for the assistance from the Province by accepting the quantities of collected household batteries and financial support by means of a grant for the project.

C. Designing a logo for the Household Battery Collection Project.

6.0 CONCLUSION:

With the siting of the G.V.R.D. Refuse Incinerator in our Municipality there is a recognized need for developing programs that will remove the potential hazardous waste in the residential waste stream.

A Household Battery Collection Project has the potential to have a major impact on the amount of mercury, cadmium, and to a lesser extent, lead, in the emissions and ash residues of the G.V.R.D. Refuse Incinerator.

It is recommended that staff continue the development of a Household Battery Collection Project, targeting commencement during National Environment Week as outlined in this report."

Respectfully Submitted,

Alderman J.M. Sawicki,
CHAIR

Alderman D.P. Drummond

Alderman E. Nikolai

Alderman F.G. Randall

Alderman J. Young