

TORONTO STAFF REPORT

November 4, 1999

To: Board of Health

From: Dr. Sheela V. Basrur, Medical Officer of Health

Subject: Canada Wide Standard (CWS) for Mercury in Power Generating Sector

Purpose:

This report provides information and recommendations on the Canada Wide Standard (CWS) being developed for mercury emissions from coal-fired generating stations.

Financial Implications and Impact Statement :

Not applicable.

Recommendations :

It is recommended that:

- (1) the Board of Health recommend that City Council write to the Federal Minister of the Environment to establish a Canada Wide Standard (CWS) for mercury that would effectively cap mercury emissions from Ontario's coal-fired generating stations at 45 kilograms by the year 2002;
- (2) this report be forwarded to the Environmental Task Force and the Toronto Interdepartmental Environment committee for information; and
- (3) this report be sent to all municipalities in the province with a population of 50,000 people for information and endorsement.

Background :

The federal government has established a multi-stakeholder process (the Canada Wide Standards, or CWS process) to develop environmental standards for the entire country. One of the Advisory Groups to this process has been examining mercury standards for power generating plants. All of the Advisory Groups will be providing recommendations to the Canadian Council

of Ministers of the Environment (CCME) at a meeting scheduled for November 30, 1999. Toronto Public Health has been advised that the Advisory Committee for Mercury in the Power Generating Sector will not be recommending a standard at the November meeting due to their inability to reach a consensus on the issue. This is of concern to Toronto Public Health and to residents in Toronto because the provincial government has indicated that it is waiting for direction from the CWS process before acting on mercury emissions from Ontario's coal-fired generating stations.

Both the Toronto Board of Health and Toronto City Council adopted positions earlier in 1999 that advocated a health protective standard for mercury emissions.

Comments:

Mercury and Human Health

Mercury presents a significant environmental health risk because it is toxic, persistent in the environment, and capable of accumulating in the food chain. Prenatal life (the embryo and fetus) is particularly sensitive to the toxic effects of mercury. Organic mercury crosses the placenta and can affect the development of the brain and nervous system of the fetus. Behavioural changes, reduced intellectual abilities, and reduced motor skills have been observed in children exposed in utero to low levels of mercury. Mercury is responsible for 22% of the consumption restrictions placed on fish in Lake Ontario and for 99% of consumption restrictions placed on fish in inland waters in Ontario.

Mercury is one of four substances identified under the North American Free Trade Agreement to be banned or phased out by the governments of Canada, the United States and Mexico. Canada, Ontario and the United States have also made commitments under the Canada-Ontario Agreement and under the Binational Toxics Agreement to reduce mercury emissions to the Great Lakes by 90% by the year 2000. The International Joint Commission for the Great Lakes has recommended the virtual elimination of mercury from the Great Lakes Basin. Despite these commitments and recommendations, little progress has been made to reduce mercury emissions.

Mercury Caps for Coal-Fired Generating Stations

Coal-fired generating stations are a significant source of mercury. In 1995, Ontario's coal-fired generating stations contributed approximately 10% of the mercury released from anthropogenic (i.e. mobilized by humans) sources in Ontario. Coal-fired generating stations in the United States contributed 21% of the mercury released from anthropogenic sources in that country.

In April of this year, the Toronto Board of Health adopted a report on coal-fired plants entitled: "Ontario's Changing Electrical Sector: Implications for Air Quality and Human Health", which recommended that the provincial government establish health protective air emission caps to limit the quantity of mercury, sulphur dioxide, nitrogen oxides, and carbon dioxide released from coal-fired generating stations providing electricity to Ontario consumers.

In that report, it was recommended that mercury emissions from Ontario's electrical sector be capped at 45 kilograms by the year 2002. This cap represents a 78% reduction in mercury emissions from Ontario's electrical sector over that which would otherwise be expected in the year 2002. According to a report prepared for the Ontario Clean Air Alliance, this cap could be achieved by shifting 78% of electricity projected for that date from coal to natural gas. This fuel shifting scenario would also reduce emissions of sulphur dioxide by 90%, nitrogen oxides by 57%, carbon dioxide by 37%, and six other persistent toxicants by 78%. The costs for this fuel shifting scenario have been estimated at \$1.86 per month for the average residential customer.

In July 1999, Toronto City Council endorsed the 45 kilogram air emission cap for mercury when it adopted the report entitled: "Ontario Clean Air Alliance - Recommended Caps for Ontario's Electricity Sector to Improve Air Quality" that was prepared by Toronto Works & Emergency Services.

The Ontario Ministry of Environment has indicated that it is waiting for direction from the Canada Wide Standard (CWS) process before acting on mercury emissions for Ontario's electrical sector. Given that the CWS Advisory Group for Mercury in the Power Generating Sector, which includes representatives from the power generating industry, appears unable to recommend a standard that would reduce mercury emissions from coal-fired power plants, it is recommended that the Toronto Board of Health and City Council urge the Federal Minister of Environment to establish a standard that would effectively cap mercury emissions from coal-fired plants in Ontario at 45 kilograms by the year 2002.

Conclusions:

Mercury presents a significant environmental health hazard. Toxic to humans, persistent in the environment, and capable of accumulating in the food chain, mercury is responsible for 22% of the consumption restrictions placed on fish in Lake Ontario and for 99% of the consumption restrictions placed on fish in inland waters in Ontario. Coal-fired generating stations are significant contributors of mercury emissions to the environment.

The Ontario Ministry of Environment has indicated that it is waiting for direction from the Canada Wide Standard (CWS) process before acting on mercury emissions from Ontario's electrical sector. Given that the Canadian Council of Ministers of the Environment (CCME) is deliberating on environmental standards on November 30, 1999, it is recommended that the Toronto Board of Health and City Council urge the Federal Minister of Environment to establish a standard that would effectively cap mercury emissions from Ontario's coal-fired generating stations at 45 kilograms by the year 2002.

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