

## 4. Selection of Mercury-Emitting Sectors

### 4.1 Criteria for Selecting Emission Sources Addressed in the Strategy

The Great Lakes Regional Collaboration has called for a Great Lake Mercury Emissions Reduction Strategy that reduces emissions from “new and existing sources whose mercury emissions have not been regulated,” and from sources that have been regulated but nonetheless present opportunities for additional reduction. This Strategy will use the following criteria to identify source sectors that should be evaluated to determine whether there are good opportunities for reduction:

Source sectors with the highest total emissions: According to the 2002 National Emissions inventory, the largest mercury emissions sources in the Great Lake States are:

- Coal-fired utility boilers
- Electric arc furnaces
- Portland cement manufacturers
- On-site waste incineration
- Industrial/commercial and institutional boilers (both coal and oil-fired)
- Mercury cell chlor-alkali plants
- Hazardous waste incinerators (including at cement kilns and lightweight aggregate kilns)
- Municipal waste combustors
- Residential heating with distillate oil
- Iron and steel foundries
- Taconite iron ore processing
- Fluorescent lamp breakage.

In addition to this data, the workgroup reviewed data from the Toxics Release Inventory and RAPIDS.

Source sectors that might be expected to have high deposition within Great Lakes Basin (due to speciation profile) or high local emissions impact (because of big individual sources):

Modeling indicates that coal-fired utility boilers have the largest impact on mercury deposition within the Great Lakes states. Incineration sources may have a larger deposition impact than would be predicted by their total emissions, because they tend to emit a higher percentage of oxidized mercury than other sources.

### Source Sectors with Potential for Future Emissions Growth

Most source sectors are expected to experience either little growth in mercury emissions over the coming decades, or actual reductions as the result of existing state and federal regulation or changing technology. Crematories are a significant exception, because of expected growth in cremation versus burial and because improved dentistry means more people die with teeth intact (and therefore with mercury fillings in their mouths).

Cremation is not a significant emissions source in the National Emissions Inventory, but some state inventories indicate that it is a significant source. The Strategy will address

crematories in the context of evaluating mercury emissions caused by the use and disposal of mercury-containing products.

Once sources have been selected based on the above criteria, we will evaluate them to determine whether it is prudent to recommend action by the Great Lakes states to reduce emissions:

- Are emissions from the sector already being addressed by federal or basin-wide state regulations or voluntary efforts?
- Do states have the ability to go beyond existing or forthcoming regulations/programs?
- Are there cost-effective opportunities for additional reduction?

Based on evaluation of these criteria, recommendations will be made for some sectors but not others.

#### **4.2 Priority Emission Sources**

For the purpose of this strategy, it is fruitful to aggregate some source categories together in order to explore whether emissions can be reduced through approaches that can address these categories simultaneously. Based on the above criteria, we have decided to evaluate the following broad sector categories:

- Utility boilers
- Metals production
- Waste incineration
- Cement production
- Non-Utility fuel combustion
- Mercury cell chlor-alkali plants
- Mercury emission related to product use and disposal