

stated that EPA must explain why it cannot set emission standards for groupings of metals or for representative surrogate metals rather than just a PM standard.

The commenter explained that the correlation of PM to any given metal varies with the volatility of the metal in question; therefore, EPA cannot assume that all the metals emitted by taconite plants will consistently behave as PM. The commenter stated that different PM control devices have different collection efficiencies for different metals. Therefore, the commenter stated that, even if all taconite plants had identical HAP metal input, EPA could not assume that any two plants have identical (or even similar) emission rates for any given metal.

Two commenters supported using PM as a surrogate for total HAP emissions. The commenters stated that "it is far more appropriate to use PM for total metal HAP than to attempt to specialty individual metal HAP. The earthen material that is processed is not necessarily identical in composition in each and every shovelful of material. It would be impossible to account for differences in individual HAP metal content for each load processed."

*Response:* We disagree with the first commenter; PM is a valid surrogate for the HAP metal compounds emitted from taconite iron ore processing plants. As indicated in the preamble to the proposed rule, metallic HAP are emitted from ore crushing and handling units, indurating furnaces, finished pellet handling units, and ore dryers. We determined that it is not practical to establish individual standards for each metallic HAP that could be present in the various processes (e.g., separate standards for manganese compound emissions, separate standards for lead compound emissions, and so forth for each metal compound group listed as HAP that is potentially present).

A key parameter for the control of both semi-volatile and non-volatile metal compounds is the operating temperature of the air pollution control device that is applied. At temperatures of 200 to 400 °F, the range typical of control devices applied to emissions from taconite indurating furnaces, any semi-volatile and non-volatile HAP metal compounds present, except elemental mercury, would exist in the form of fine PM and, therefore, would be controlled in direct relationship to PM. As a result, strong correlations exist between PM emissions and emissions of the individual metallic HAP compounds. Control technologies used for the reduction of PM emissions achieve comparable levels of reduction

of metallic HAP emissions. Standards requiring good control of PM emissions will also achieve a similar level of control of metallic HAP emissions. Therefore, we are establishing standards for total PM as a surrogate pollutant for the individual metallic HAP. Establishing separate standards for each metallic HAP would impose costly and significantly more complex compliance and monitoring requirements. In addition, establishing separate standards for each metallic HAP would achieve little, if any, HAP emissions reductions beyond what would be achieved using the total PM surrogate pollutant approach.

#### **IV. Summary of Environmental, Energy, and Economic Impacts**

The environmental, energy, and economic impacts of the final rule are based on the replacement of poor performing controls at existing sources with new controls capable of meeting the emission limits established in the final rule. We did not estimate impacts for new sources since we do not project any new or reconstructed affected sources becoming subject to the new source MACT requirements in the foreseeable future. Specifically, we anticipate that two plants will install new impingement scrubbers on a total of 33 out of the 264 ore crushing and handling emission units to meet the PM emission limit. We expect that four plants will install new venturi-rod wet scrubbers or will upgrade existing wet scrubbers on at least one of their indurating furnaces. In total, we estimate that the existing controls will be replaced with new venturi-rod wet scrubbers on three of the 47 indurating furnace stacks. We estimate that the existing controls will be upgraded with new components on eight of the 47 indurating furnace stacks. We anticipate that four plants will install new impingement scrubbers on a total of 11 out of the 82 finished pellet handling emission units to meet the finished pellet handling PM emission limit.

##### *A. What Are the Air Emission Impacts?*

The installation of new controls and upgrades discussed in the preceding paragraph will result in reductions in emissions of metal HAP, acid gases, and PM. Overall, the final standards are expected to reduce HAP emissions by a total of 270 tpy, a reduction of about 43 percent. Metallic HAP emissions will be reduced by 14 tpy (a 42 percent reduction) and acid gas emissions (HCl and HF) will be reduced by 256 tpy (a 51 percent reduction). In addition, the final standards are expected to reduce

PM emissions by 10,538 tpy, a reduction of about 62 percent.

##### *B. What Are the Cost Impacts?*

The total installed capital costs to the industry for the installation of control equipment are estimated to be \$57 million. Total annualized costs are estimated at \$9 million/yr, which includes \$4.5 million/yr in capital recovery costs, \$3.2 million/yr in emission control device operation and maintenance costs, and \$0.9 million/yr for monitoring, recordkeeping and reporting. These costs are based on the installation of new wet scrubbers on 33 ore crushing and handling units, three indurating furnace stacks, and 11 finished pellet handling units. The costs are also based on upgrading two wet scrubbers and six ESP for indurating furnaces. In addition, the estimate includes the cost of bag leak detection systems for baghouses, CPMS for scrubbers and wet ESP, and COMS for dry ESP.

##### *C. What Are the Economic Impacts?*

We prepared an economic analysis to evaluate the impact the final rule will have on the producers and consumers of taconite and society as a whole. The taconite industry consists of eight companies owning eight mining operations, concentration plants, and pelletizing plants. The total annualized social cost of the final rule is \$8.6 million (in 2002 dollars), which is almost the same as the total annualized compliance cost. This cost is distributed among consumers (mainly steel mills) who may buy less and/or spend more on taconite iron ore as a result of the Taconite NESHAP, including merchant taconite producers that sell their output on the market, integrated iron and steel plants that produce and consume the taconite captively within the company, steel producers that use electric arc furnace (EAF) technology to produce steel from scrap, and foreign producers. Consumers incur \$2.8 million of the total social costs, merchant producers incur \$3.7 million in costs, and integrated iron and steel producers incur \$4.5 million in costs. The EAF producers and foreign producers enjoy a net gain in revenues of \$1.1 million and \$1.3 million, respectively.

Our analysis indicates that the taconite iron ore market will experience minimal changes in the price and quantity of ore produced, and in the prices and quantities of steel mill products (some of which are produced using taconite). Prices in the taconite iron ore market are estimated to increase by 0.17 percent while production may decrease by 0.14 percent. The price of