

the indurating furnace capital equipment replacement costs were based on equipment and installation costs incurred by Minntac in 1991 to install two new venturi scrubbers for furnace lines 4 and 5. For ore crushing and handling and pellet handling units, the capital equipment replacement costs were based on equipment costs obtained from two wet scrubber vendors.

In follow-up discussions with the industry, industry representatives indicated that the costs of purchasing and installing a new wet scrubber were underestimated. For example, based on the cost estimates provided by one plant, the installation of two new wet scrubbers on their furnace would cost \$18 million, not the \$9.4 million estimated by EPA. We asked each plant to provide an estimate of the cost impact the limits in the final rule will have on their plant. Overall, industry estimated a capital equipment and installation cost of \$57 million. The costs provided by industry are based on a combination of costs estimated by plant engineers, previous equipment replacement costs, and vendor cost estimates.

The EPA asserts that the impact estimate of \$57 million provided by the industry is a conservatively high estimate based on the fact that some plants did not account for the averaging of the emissions for those units within the ore crushing and handling and finished pellet handling affected sources. However, in order to ensure that we fully account for the cost impact to the industry, we used the conservatively high estimates provided by the industry. Therefore, the capital cost impact of the emission limits in the final rule was estimated to be approximately \$57 million, including emission control capital costs and monitoring, recordkeeping, and reporting (MRR) capital costs. The annual costs of the final rule are estimated to be \$9 million per year, including annualized capital and annual operational and MRR costs. For more information on the industry provided costs and the revised cost analysis, see the revised cost analysis memorandum in the docket.

Comment: Two commenters stated that the costs of the rule as proposed are disproportionate to the reduction in HAP.

Response: The revised estimate of annual compliance costs for the final rule is \$9 million per year, and this expenditure is estimated to result in the reduction of 270 tpy of HAP and 10,538 tpy of PM. The corresponding cost per ton of HAP reduced is \$33,333; the corresponding cost per ton of PM reduced is \$854. These values are

similar to or lower than those in other MACT standards. In addition, the emission limits in the final rule are based on the MACT floor level of control. The CAA does not give the EPA the discretion to consider costs for the MACT floor level of control.

Comment: One commenter stated that the costs and resources associated with the administrative requirements (e.g., continuous monitoring, stack testing) of the final rule will pose a significant additional burden on their operations. The commenter cited estimated costs of \$515,000 for the installation of additional instrumentation and monitoring equipment, an additional cost of \$100,000 for dust collector monitoring maintenance, and an additional cost of \$45,000 for stack testing. The commenter stated that their plant is already operating under a title V permit and already has a well-controlled dust control system in place. The commenter asserted that the increased continuous monitoring and increased stack testing is not necessary to protect human health or the environment and adds unnecessary costs.

Response: In the proposed rule, we included only those monitoring and testing requirements that were necessary to ensure the continued compliance with the PM emission limits. However, following a review of the public comments and follow-up discussions with the industry and States, we have written the final rule to reduce the monitoring and testing burden:

- To reduce the monitoring burden, we have deleted the requirements to conduct monthly transducer checks, quarterly gauge calibration checks, semiannual flow sensor calibration checks, daily pressure tap pluggage checks, and monthly electrical connection continuity checks.
- We have reduced the indurating furnace stack testing burden by removing the requirement to conduct simultaneous tests of all the stacks on one furnace. The final rule allows plants to conduct sequential testing of the stacks for a furnace, provided the tests are completed "within a reasonable period of time, such that the indurating furnace operating characteristics remain representative for the duration of the stack tests."
- We have removed the volumetric flow rate and process throughput rate criteria for grouping similar ore crushing and handling and pellet handling emission units. This will allow more of these emission units to be grouped together, and thus, will result in fewer initial compliance tests being required for them.

- For dry ESP, we have allowed plants to monitor daily average secondary voltage and daily average secondary current in lieu of using a COMS.

Comment: According to one commenter, it is confusing that in one section of the Economic Impact Assessment (EIA), the Agency concludes that the final rule alone is unlikely to lead to mine closure, but clearly states that it's possible that two or three firms may close or sell some or all of their operations. The only consistent statement in the EIA, according to the commenter, is that the proposed rule will add to existing financial stresses in the industry.

Response: The empirical literature on steel mill capacity and closure suggests that import and mini-mill competition are more important explanatory variables for capacity and closure decisions than are pollution abatement cost expenditures. The EPA's market and facility impact analysis did not explicitly model mine closure decisions because of limited mine-level data and because the costs of compliance are relatively small. The EPA's data indicate that the compliance costs alone are generally too low to result in facility closure. However, we recognized that several companies that owned taconite mines in 2000 were already under significant financial hardship; four firms experienced operating losses in 2000, and several were also operating under Chapter 11 protection. As a result, EPA collected financial data and considered several criteria to determine whether companies would be able to obtain financing for capital investments associated with compliance, or might have to close or sell individual mine operations. The EPA examined the following company financial data:

- Change in profits projected by the economic model;
- Altman Z-scores;
- Current ratios; and
- Recent environmental compliance expenditures.

Based on our review, EPA concluded that two or three companies may close or sell operations. A review of recent data from the U.S. Geological Survey (USGS) and company financial reports confirms this pattern. In 2001, financially-strapped steel companies sold assets. Cleveland-Cliffs raised its total ownership of Tilden mine to 85 percent by acquiring an additional 45 percent share from Algoma Steel Inc. Cleveland-Cliffs and Minnesota Power purchased LTV Steel Co. in late 2001. Cleveland-Cliffs then acquired all the mining and processing facilities, including 25 percent share of the