

respectively. Formaldehyde and chromium compounds each account for less than 1 percent of total baseline annual HAP emissions. Today's final rule will reduce annual POM emissions by as much as 90 Mg/yr (99 tpy). Emissions of phenol and ethylene glycol will be reduced by approximately 19 Mg/yr (21 tons/year) and 11 Mg/yr (12 tpy), respectively. Implementing today's rule will also reduce volatile organic compound (VOC) and carbon monoxide (CO) emissions by 166 Mg/yr (182 tpy) and 71 Mg/yr (78 tpy), respectively. The final rule will result in an increase in annual nitrogen oxides (NO_x) emissions of about 79 Mg/yr (87 tpy) due to the operation of additional thermal oxidizers to control organic HAP emissions.

Indirect or secondary air impacts of today's final rule result from increased electricity usage associated with operation of control devices required by the rule. Assuming that affected plants will purchase electricity from a power plant, we estimate that the final rule will result in increases of secondary emissions of criteria pollutants, including particulate matter less than 10 micrometers in aerodynamic diameter (PM-10), sulfur dioxide (SO₂), NO_x, and CO from power plants. Under today's final rule, secondary PM-10 emissions will increase by 0.22 Mg/yr (0.24 tpy); secondary SO₂ emissions will increase by about 8.9 Mg/yr (9.8 tpy); secondary NO_x emissions will increase about 4.5 Mg/yr (4.9 tpy); and secondary CO emissions will increase by about 0.15 Mg/yr (0.16 tpy).

We estimate that there will be no new sources within the refractory products manufacturing industry within the next 3 years. Therefore, we are not projecting air impacts for new sources under today's final rule.

C. What Are the Cost Impacts?

The estimated total capital costs of today's final rule are \$4.6 million. These capital costs apply to existing sources and include the costs to purchase and install thermal oxidizers on affected sources that are not currently controlled. The estimated annualized cost of today's final rule is \$2.3 million. The annualized costs account for the annualized capital costs of the control and monitoring equipment, operation and maintenance expenses, performance testing, and recordkeeping and reporting costs.

D. What Are the Economic Impacts?

Given the estimated costs to comply with the regulation, we prepared an economic analysis to evaluate how these costs would impact producers and

consumers of refractories, and society as a whole. The refractory products manufacturing industry currently consists of 147 establishments. There are eight major sources in the industry affected by the rule, six of which will incur costs to reduce emissions and report compliance, and two of which only incur minor recordkeeping and reporting costs. In recent years, the industry has experienced substantial financial stress that coincides with the decline in the steel industry, which is a major consumer of refractory products. Since our analysis at proposal, the number of facilities in operation has decreased by 14 due to bankruptcies or closures.

The industry consists of three market sectors, including: bricks and shapes, monolithics, and RCF. In 1997, the industry produced about two million tons of bricks and shapes, 870,000 tons of monolithics, and about 34,000 tons of RCF for a total market value of approximately two billion dollars.

The total annualized regulatory compliance cost of the rule is \$2.3 million (in 1998 dollars), which represents 0.001 percent of total market value. Because foreign competition currently has a strong influence on this industry, and only six out of 147 producers are affected by the rule, our analysis of the final rule assumes that producers of bricks and shapes will not be able to increase prices to recover a portion of the compliance costs. Thus, these producers are assumed to absorb the full cost of the regulation, which represents the maximum potential impact on producers. If prices happen to rise as a result of the regulation, impacts on producers will be lower than reported here.

Our analysis predicts that domestic production of bricks and shapes will decrease by approximately 4,000 tons (or 2/10ths of one percent). Foreign imports are assumed to absorb this loss in domestic production, which represents approximately two percent of total foreign imports. The monolithics and RCF sectors of the market are not subject to the rule and thus no price or production level changes are predicted. After accounting for the changes in the market for refractories and the increase in foreign imports, the total cost of the regulation on society as a whole is approximately \$2 million.

Of the eight plants affected by the rule, one facility may close due to regulatory costs. The estimated regulatory cost to this facility assumes the use of add-on controls, which would exceed the total revenues of this facility, hence our model estimates that it would close. However, we recognize that this

facility, as well as the other affected facilities, have several options to change input materials, or attributes of their production process such that they could substantially reduce the cost associated with add-on control technology. Without explicit knowledge of decisions to be made by this and other facilities in response to the regulation, our analysis assumes that only add-on control technology will be installed.

E. What Are the Non-Air Quality Environmental and Energy Impacts?

To comply with today's final rule, we expect that affected facilities will control organic HAP emissions by installing and operating thermal oxidizers. Therefore, we project that today's rule will have no water or solid waste impacts.

Energy impacts consist of the electricity and fuel needed to operate control devices and other equipment that are required under the final rule. Assuming that affected facilities comply with the final rule by installing and operating thermal oxidizers, we project that today's final rule will increase overall energy demand (*i.e.*, electricity and natural gas) by about 280 thousand gigajoules per year (265 billion British thermal units per year). Electricity requirements are expected to increase by about 1,570 megawatt-hours per year under today's rule. Natural gas requirements are expected to increase by about 7 million cubic meters per year (250 million cubic feet per year) under today's final rule.

VI. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review

Under Executive Order 12866 (58 FR 51735, October 4, 1993), EPA must determine whether the regulatory action is "significant" and, therefore, subject to review by the Office of Management and Budget (OMB) and the requirements of the Executive Order. The Executive Order defines "significant regulatory action" as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees,