

the facility began manufacturing a new product that represents the "worst-case" in terms of organic HAP emissions (*i.e.*, the organic HAP processing rate for the new product would exceed the maximum organic HAP processing rate established during the most recent performance test). One commenter stated that this requirement would be costly, time-consuming, and could result in disruptions in production. Another commenter further elaborated that production delays could result while the facility tries to schedule a performance test. Both commenters requested that we specify a level for the allowable changes in the HAP content of raw materials and not require a new compliance test when the changes in HAP content are below that level. One of the commenters stated that a level of 10 percent would be appropriate.

*Response:* We agree with the commenters that a new compliance test should not be required when a facility begins producing a new product that constitutes a slight increase in the maximum organic HAP processing rate established during the most recent performance test. We have written this provision in the final rule to allow increases in the maximum organic HAP processing rate up to 10 percent without triggering a new performance test. We believe this is appropriate for two reasons. The HAP content of some raw materials (*e.g.*, resins or binders) used in refractory products manufacturing can vary slightly from shipment to shipment, and those variations may be beyond the control of the user. Even if the HAP content of the resin or binder is 10 percent more than the HAP content of the same material that was processed during the compliance test, the net increase in controlled emissions would most likely be within the measurement error of the test method. Therefore, we believe it is reasonable to allow increases of up to 10 percent in the organic HAP processing rate without requiring a new compliance test.

*Comment:* Two commenters questioned the requirement for monitoring catalytic oxidizer temperatures at the inlet to the catalyst bed. Both commenters stated that monitoring the catalyst bed outlet temperatures would be a much better indicator of performance.

*Response:* We disagree with the commenters that monitoring catalyst bed outlet temperatures would provide a better indication of catalyst oxidizer performance than monitoring catalyst bed inlet temperatures. Monitoring catalyst bed inlet temperatures ensures that the inlet gas stream is heated to the minimum temperature at which

catalytic oxidation will occur. Above this minimum temperature, as temperature increases through catalytic oxidization, control (destruction) efficiency increases. We also note that the monitoring of inlet temperature must be performed at the inlet to the catalyst bed and not at the inlet to the oxidizer itself. After passing through the inlet to the oxidizer, the waste gases pass through a preheat zone, which raises the temperature to the minimum required for catalytic oxidization. Monitoring must take place between this preheat zone and the inlet to the catalyst bed. We do not believe that monitoring catalyst bed outlet temperatures would be appropriate for two reasons: (1) Catalyst bed outlet temperature is more of an indicator of the concentration of organics in the inlet gas stream; the higher the organic concentration at the inlet, the higher the bed outlet temperature; and (2) some catalytic oxidizers are equipped with heat recovery units that are located at the outlet of the catalyst bed and can interfere with bed outlet temperature monitoring. Consequently, we have concluded that monitoring the bed inlet temperature is a better indicator of the performance of catalytic oxidizers than bed outlet temperature monitoring. We continue to require catalyst bed inlet temperature monitoring in the final rule. In addition, we are requiring owners or operators of affected sources that are controlled with catalytic oxidizers to measure the activity of the catalyst bed at least every 12 months and take whatever corrective action is needed, such as replacing the catalyst, to ensure that the catalyst is performing as designed.

#### *D. Economic and Environmental Impacts*

*Comment:* Two commenters disagreed with our estimates of the annual increase in energy costs that would be associated with the proposed NESHAP. One of the commenters stated that, based on our estimated annual energy costs of \$569,800 and estimated annual natural gas consumption of 644 million cubic feet ( $644 \times 10^6$  ft<sup>3</sup>), the unit price for natural gas would be \$0.89 per thousand standard cubic feet (scf) (\$/1,000 scf) without accounting for electricity costs. If the cost of electricity is considered, the resulting unit price for natural gas would be even lower. He pointed out that current unit prices for natural gas are considerably higher. The average natural gas unit prices in four States (Kentucky, Missouri, Indiana, and Pennsylvania) for the years 2000 to 2002 ranged from \$6.34 to \$6.97/1,000 scf and averaged \$6.37/1,000 scf for the

four States. Based on data from the Department of Energy's Energy Information Administration (DOE-EIA), one of the commenters stated that the average unit price for natural gas in 2001 was \$4.56/1,000 scf. The commenter believes that, regardless of which of these current unit prices are used, the estimated annual energy costs should have been several times greater.

*Response:* After reviewing our estimated annual energy costs, we discovered an error in our estimate that an additional  $644 \times 10^6$  ft<sup>3</sup> of natural gas would be consumed annually under the proposed NESHAP. That estimate was based on the inclusion of several sources that would not have been subject to the final rule. However, we did not use that figure ( $644 \times 10^6$  ft<sup>3</sup>) to estimate annual energy costs. Our estimated annual energy costs were based on the assumption that annual natural gas consumption would increase by  $158 \times 10^6$  ft<sup>3</sup>. That figure was derived from the models used to estimate annual control costs, and we believe that figure is accurate. Using a consumption of  $158 \times 10^6$  ft<sup>3</sup> of natural gas per year and a natural gas unit price of \$3.30/1,000 scf, we estimated the cost of natural gas to be \$520,200/yr. The difference between this cost and the total energy costs presented in the preamble to the proposed rule (\$569,800) is the cost of electricity, which we estimated to be approximately \$49,600/yr.

We agree with the commenters that current natural gas unit prices are considerably higher than the unit price (\$3.30/1,000 scf) that we used to estimate energy costs for the proposed rule. However, according to DOE-EIA, natural gas prices are projected to drop back to their pre-1999 levels within a year and remain below \$4.00/1,000 scf until the year 2020. Natural gas unit prices are projected to average \$3.45/1,000 scf for the years 2006 to 2009, which represent the first 3 years in which facilities will be required to comply with the Refractory Products Manufacturing NESHAP. This average unit price is only slightly higher than the unit price of \$3.30/1,000 scf that we used to estimate energy costs for the proposed rule. Furthermore, electricity prices are projected by DOE-EIA to average \$0.043 per kilowatt-hour (kwhr) for the same 3-year period, whereas our estimated energy costs were based on electricity unit prices of \$0.059/kwhr. Using those projected unit prices for natural gas and electricity, our energy costs for the proposed rule would have been \$580,000, as compared to the figure of \$569,800 reported in the preamble to the proposed rule. (See