EPA-R5-2019-006986_0000263

from the list of chemicals covered by the final standards.

Several organic chemical and petroleum producers believe the standards should not apply to distillation facilities that do not produce any of the chemicals listed in the regulation as the main product. They said that only listed chemicals produced as products should be covered, while contaminants, by-products, and intermediates should not be included. It was also suggested that the standards should not apply to the recovery of waste or feedstock components. There was a request that EPA clarify whether a facility would be an affected facility if its process stream contains listed chemicals that are either sold, disposed of, used in the production of other chemicals, or recycled. Furthermore, it was suggested that the standards specify a minimum level for quantities of listed chemicals in a process stream that would cause the proposed regulation not to be applicable to distillation facilities that contain listed chemicals only as impurities in a process stream.

The EPA considers it appropriate for the standards to apply to any distillation facility within a process unit producing any of the listed chemicals as a product, by-product, co-product, or intermediate. The standards were developed from data on distillation facilities within process units that produce the chemicals listed in § 60.667 in any of the forms listed above. The cost of controlling emissions from the production of a listed chemical as a by-product, co-product, or intermediate is similar to the cost of controlling emissions from the production of that chemical as a product. Furthermore, the application of the standards to facilities producing any of the listed chemicals was found to be reasonable. Therefore, EPA considers the word product to also represent by-products, co-products, and intermediates. The standards are also applicable to distillation facilities that are used to recover waste or feedstock components as long as the facility is within a process unit producing any of the listed chemicals as a product. The main factor in determining if a listed chemical is produced as a product is the use of the chemical after the process unit. The EPA considers either of the following downstream uses as indicative of the production of a listed chemical as a product: (1) Produced for sale as that listed chemical, or (2) used in another process where that listed chemical is needed. However, if a listed chemical is only part of a mixed stream exiting a process unit and cannot be sold or used in another process as the listed chemical, then that chemical is not considered to be produced as a product.

The EPA has decided that for the purposes of these standards it is more appropriate to determine applicability according to whether a listed chemical is intended to be produced as a product instead of setting a minimum concentration level of a listed chemical as a means of defining what may constitute production as a "product". It is not feasible to set any one concentration limit for listed chemicals below which the chemical is always an impurity or waste. It is not feasible because the necessary concentration or purity for a listed chemical to be considered a product can vary from site to site. For example, a chemical that is produced as 90 percent pure from one process may only be 80 percent pure to be considered as a product for another process. Therefore, resource requirements for establishing different concentration limits for all of the processes covered by the standards would be prohibitive because of the diversity and complexity of the SOCMI.

Selection of BDT

One commenter stated that catalytic oxidation can be an attractive alternative to thermal incineration. He indicated that although catalytic oxidation can be designed for high VOC reduction efficiencies, economic factors dictate whether these levels are practical. The commenter added that the 98 percent reduction efficiencies associated with the proposed standards would possibly require the use of uneconomically large catalyst volumes in catalytic incinerators or require the use of thermal incinerators. The commenter pointed out that 98 percent reduction efficiency may not result in a measurable improvement in the environment over the case of catalytic oxidation at an efficiency slightly lower than 98 percent. Furthermore, the use of thermal incineration may potentially entail the following detrimental effects: (a) A higher energy usage by the affected facilities; (b) an increase in NO_x emissions from the affected facilities using thermal incineration; and (c) a decrease in the international competitive position of domestic chemical producers with respect to foreign competition.

Another commenter suggested that those distillation facilities with vent streams above the TRE cutoff be considered for the applicability of emission reduction techniques other than flaring or incineration. A suggestion was made that technologies such as catalytic oxidation and carbon adsorption which involve lower costs and energy requirements than flaring or incineration be evaluated for application to distillation facilities determined to have cost-effectiveness values above the cutoff. It was pointed out that although the emission reduction capabilities of catalytic oxidizers and recovery devices are not consistently as great as combustion, further emissions reductions could be achieved using these relatively low cost devices.

The EPA has determined that where catalytic oxidation units are applicable, they are capable of achieving 98 weight-percent reduction efficiency. However, catalytic oxidation for VOC emissions reduction has not been demonstrated to be universally applicable for all distillation process vent streams, and we cannot subcategorize facilities that can use catalytic oxidation on the basis of available information. Therefore, the costs of catalytic oxidation were not evaluated by the Agency. Catalytic oxidizers are limited by their inability to handle streams with high heating values because deactivation of the catalyst occurs at high temperatures. Catalysts can also be deactivated by compounds present in some waste streams, such as arsenic, sulfur, mercury, lead, zinc or tin.

The Agency did evaluate two control techniques universally applicable within the industry, thermal incineration and flaring. The Agency examined emissions data from incinerators already operating within the industry, as well as incinerator and flare tests conducted by the Agency and by chemical companies. All the new, well-operated incinerators and flares were found to achieve 98 percent reduction efficiency. From the available data the Agency determined many facilities could achieve 98 percent reduction efficiency at a reasonable cost using thermal incineration and flaring. The Agency has bounded the cost impacts associated with combustion devices by costing the most expensive devices: thermal incinerators and flares. Costs associated with these devices were found to be reasonable for facilities with TRE index values less than 1.0. Therefore, if a stream does exist whose constituents are such that a catalytic oxidizer is not applicable or not economical, a flare or thermal incinerator can be used.

The commenter is particularly concerned that EPA, by not allowing catalytic incinerators to substitute for thermal incinerators, will create a competitive disadvantage for U.S. plants vis-a-vis foreign competition. However, the Agency is not preventing the use of catalytic incinerators. They may be used if the emission reduction requirements are satisfied. Furthermore, if an owner