

temperatures to reach 10.4 kPa). The temperature estimate cited by the industry representatives was confirmed on a theoretical level using a regression equation for asphalt vapor pressure as a function of temperature, developed by the Owens Corning Company using a modified version of the American Society of Testing and Materials (ASTM) method D2879 (Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope). According to the regression equation, asphalt flux reaches a vapor pressure of 10.4 kPa at approximately 450 °F.

Since the regression equation, which under-predicts the temperature at which asphalt flux reaches a given vapor pressure (according to industry and EPA representatives), tends to corroborate the storage temperature cited by the industry representatives, the EPA believes that a storage temperature of 500 °F appropriately represents a vapor pressure of 10.4 kPa. Consequently, the final rule specifies that tanks storing (and loading racks transferring) asphalt at a maximum vapor pressure of 10.4 kPa or greater, or at a maximum temperature of 500 °F or greater, must be controlled with a combustion device. Also, the final rule allows the use of standard industry nomographs and other relationships to determine the vapor pressure of asphalt. The docket for this NESHAP (Docket No. OAR-2002-0035) contains a memorandum from the National Petrochemical and Refiners Association (NPRA) that presents several manual methods that are currently used in the petroleum industry for estimating the vapor pressure of asphalt.

#### C. Level of the Standards

*Comment:* One commenter questioned the derivation of the THC destruction and combustion efficiency standards (95 and 99.6 percent, respectively). The commenter contended that the statistical analysis used to derive the standards from test data was incorrect.

*Response:* The EPA agrees with the commenter that the available data set is too small for a rigorous statistical analysis. Therefore, at proposal, we chose to account for the variability in the data by subtracting one standard deviation from the mean, rather than performing a more formal statistical analysis to derive the proposed emission limit. Despite the small size of the data set, since proposal, the EPA has calculated the 95 percent confidence interval about the mean of the test data for THC destruction efficiency. The lower limit of the 95-confidence interval

is 94.85 percent THC destruction efficiency. (See section 2.3.10.2 of the BID for a more detailed discussion of this analysis.) In other words, there is only a 5 percent chance that the true population mean of THC destruction efficiency will be below 94.85 percent. In addition, all four of the facilities with THC destruction efficiency data would meet the standards. This calculation supports that a THC destruction efficiency of 95 percent is achievable. The 95 percent destruction efficiency has thus been included in the final rule.

Since proposal, the EPA has calculated the 95 percent confidence interval about the mean of the test data used to establish the proposed combustion efficiency. The lower limit of the 95 percent confidence interval is 99.49 percent combustion efficiency. Since this value is lower than the proposed combustion efficiency limit of 99.6 percent, the EPA has decided to establish the combustion efficiency limit in the final rule at 99.5 percent. (Note that this change does not affect EPA's determination, made originally at proposal, that beyond-the-floor controls remain inappropriate here, largely because EPA knows of no means of control more efficient than combustion control.)

*Comments:* Comments were also received on the proposed rule regarding the use of electric regenerative thermal oxidizers (RTO). One commenter explained that EPA's proposed method for calculating combustion efficiency penalizes control technologies that do not burn auxiliary fuel and, consequently, have a relatively low CO<sub>2</sub> concentration at their outlets. The commenters stated that the proposed method for calculating combustion efficiency understates the combustion efficiency achieved by an RTO since the only relevant source of CO<sub>2</sub> in RTO exhaust comes from the destruction of hydrocarbons. The commenters submitted test data and proposed a separate equation for calculating the destruction efficiency for RTO.

*Response:* The EPA reviewed the test data submitted by the commenters (see section of the 2.3.10.6 of the BID) and agrees that, because RTO do not use auxiliary fuel, the outlet CO<sub>2</sub> concentrations are much less than those of conventional thermal oxidizers without compromising THC destruction efficiency. Consequently, the final rule contains an option that allows combustion devices that do not use auxiliary fuel to use an outlet-only THC destruction efficiency equation. To determine the level of the standard for RTO, the same approach as was taken for the derivation of the THC

destruction efficiency and combustion efficiency standards was used (*i.e.*, one standard deviation was subtracted from the average THC destruction efficiencies calculated from the test data submitted by the commenters). The resulting calculations (see section 2.3.10.6 of the BID) yield a THC destruction efficiency standard for RTO of 95.8 percent.

#### D. Compliance Options

*Comment:* One commenter noted that the control devices used at refineries to control blowing stills are flares, boilers, and process heaters and that refineries do not typically have thermal oxidizers. The commenter urged the EPA to allow the use of combustion devices other than thermal oxidizers to control blowing still emissions.

*Response:* The proposed rule did not prohibit the use of process heaters, boilers, and flares because we consider these units to be types of thermal oxidizers. However, since the term "thermal oxidizer" was not defined in the proposed rule, the proposed rule could be interpreted differently. In the final rule, we use the term "combustion device" instead of "thermal oxidizer" and have defined combustion device to include process heaters, boilers, flares, and incinerators; all devices which achieve the same high degree of HAP destruction provided they operate using efficient combustion. Consistent with other rules, a performance test and continuous parameter monitoring are not required for boilers or process heaters if the vent streams to be controlled are introduced into the flame zone, or if the unit has a design input heat capacity of 44 MW or greater since the residence time and operating temperature of these devices is great enough to ensure reduction of HAP emissions. Flares are required to meet the design and operating requirements of 40 CFR 63.11 in lieu of conducting performance tests, as explained earlier in this preamble.

#### E. Performance Tests

*Comment:* One commenter expressed concern with the requirement to conduct performance testing before the compliance date. The commenter stated that the NESHAP General Provisions and nearly all previously-issued MACT standards allow the test to be conducted within 180 days of the compliance date (existing sources) or at startup (new sources). The commenter pointed out that the testing date for existing sources is 8 months earlier than what is provided in the General Provisions and listed several problems that it would create.