

emission limitation for by-product hydrogen had a daily averaging period for continuous compliance. According to the commenters, the Agency developed the proposed standard using annual average emissions and actual annual production and then interpolated to a daily limit without regard to statistical error. Therefore, the commenters requested either an annual average emission rate limit or that the daily limit be set at not less than two times the annual limit divided by 365 (days).

Response: The commenters are correct in that the normalized mercury emissions used to establish the standards were based on annual average emissions and annual actual chlorine production. Therefore, the commenters' concerns about the variability of the control systems over a year and the ability to comply on a daily basis with this limit have merit. We considered the two options offered by the commenters (a 365-day compliance period and adjustments to account for daily variations).

We do not feel that it would be appropriate to apply a generic multiplier to the limit for mercury cell chlor-alkali plants to account for short-term variation. In addition, mercury cell emissions data were not available to assess the variability in emissions from these emission points. Therefore, we concluded that the emission limitation should reflect an annual average. This would be consistent with the data used to create the emission limitation and would allow for short-term variations in operations and control device performance.

The final rule is allowing weekly monitoring/testing as an alternative method to determine continuous compliance with the emission limitations. In order to be consistent with the continuous compliance approach, we concluded that the by-product hydrogen/end box ventilation emission limitation in the final rule should be annualized on a 52-week rolling basis. Specifically, the final rule requires that mercury emissions from all by-product hydrogen streams and end box ventilation system vents not exceed 0.076 grams Hg/Mg Cl₂ for any consecutive 52-week period.

E. What Issues Were Raised Regarding the Work Practices?

Comment: One commenter recommended that EPA establish numerical standards for fugitive emissions. The commenter maintained that, absent published information on good mass balance analyses performed at chlor-alkali facilities, one can only

assume that significant mercury losses are occurring through fugitive emissions. Accordingly, the commenter felt it is crucial that the EPA step up efforts to address all potential release routes from such facilities, including fugitive emissions.

Another commenter, which submitted comments after the close of the comment period, expressed the view that the mercury consumed cannot be accounted for in material balances. This commenter asserted that the proposed rule failed to address the majority of the true annual mercury emissions from the mercury cell chlor-alkali industry. The commenter explained that the mercury used in this industry is not incorporated into final products or consumed in the process, so all mercury purchased is used to replenish mercury that has been lost from the manufacturing process. The commenter compared the amount of mercury purchased by the industry in 1994 (136 tons) to EPA's estimate of annual emissions (22,200 pounds or 11.1 tons) and concluded that the proposed rule fails to account for nearly 90 percent of the true mercury emissions from this industry. The commenter drew this conclusion based on the assumption that most of the mercury would be released to the air rather than transferred off-site as solid waste or accumulated in on-site tanks and ponds. The commenter noted that EPA's estimate of annual emissions was based on outdated and inadequate estimates of fugitive emissions which were based on short-term measurements taken when fugitive emissions were non-representatively low.

One of these commenters, who submitted comments after the comment period, recommended that EPA require both monitoring of fugitive emissions from cell rooms and waste storage areas and establish a reduction goal for such emissions. According to the commenter, technologies are available to quantify airborne mercury concentrations continuously, and in combination with estimates of air flow rates, estimates of fugitive loss rates under selected conditions could be made and could serve as the basis for reduction targets.

Response: The issue of unaccounted for mercury has been the subject of intense scrutiny from other groups within EPA and the industry. As part of the Great Lakes Binational Toxics Strategy, mercury cell chlorine producers annually report the total mercury consumption for the industry. From the baseline consumption of 160 tons per year (tpy) for the years 1990–1995, the industry reported an 81 percent reduction of mercury consumed in 2001 (30 tpy). One of the commenters

characterized the 2001 consumption as an outlier, but the 79 tpy consumed in 2000 still represents a significant decrease from the baseline level.

Even with this decrease in consumption, significant mercury remains unaccounted for by the industry. The mercury releases reported to the air, water, and solid wastes in the 2000 Toxics Release Inventory (TRI) totaled around 14 tons. This leaves around 65 tons of consumed mercury that is not accounted for in the year 2000.

While it may appear to the commenters that the discrepancy in the mercury material balance is the result of fugitive emissions, there is little empirical evidence to support this conclusion. The commenters did not provide any emissions data to support their assertion. Furthermore, industry personnel claim that mercury which condenses and accumulates in pipes, tanks, and other plant equipment makes up a large component of the unaccounted for mercury. While the commenters completely discount this claim by the industry, it is relevant to consider the very high density of mercury. For instance, the 65 tons of unaccounted for mercury in 2000 averages just over 7 tons per plant. One gallon of mercury weighs around 113 pounds, meaning that around 124 gallons of mercury would be unaccounted for per plant. This is a very small percentage (less than 2 percent) of the amount of mercury typically on site at most facilities. However, the industry is also unable to fully substantiate their theory. Therefore, the fate of all the mercury consumed at mercury cell chlor-alkali plants remains somewhat of an enigma.

We agree that work practice standards should only be set when it is not feasible to prescribe or enforce an emission standard. Indeed, our reasons for establishing work practices instead of numerical limits are based on factors associated with the practicality and feasibility of setting a realistic limit against which compliance can be measured and enforced.

First, data are not available to establish a numerical emission standard for fugitive emissions. As stated in the proposal preamble (67 FR 44680), emissions data for fugitives from cell rooms and waste storage areas are very limited. Second, we do not agree with the commenter's implication that available measurement technologies could support enforcing a numerical emission standard for the following reasons:

- Mercury emission monitors have not been used to monitor fugitive