Subpart BB—Silicon Carbide Production

§ 98.280 Definition of the source category.
Silicon carbide production includes any process that produces silicon carbide for abrasive purposes.

§ 98.281 Reporting threshold.
You must report GHG emissions under this subpart if your facility contains a silicon carbide production process and the facility meets the requirements of either §98.2(a)(1) or (a)(2).

§ 98.282 GHGs to report.
You must report:

(a) CO$_2$ and CH$_4$ process emissions from all silicon carbide process units or furnaces combined.

(b) CO$_2$, CH$_4$, and N$_2$O emissions from each stationary combustion unit. You must report these emissions under subpart C of this part (General Stationary Fuel Combustion Sources) by following the requirements of subpart C.

§ 98.283 Calculating GHG emissions.
You must calculate and report the annual process CO$_2$ emissions from each silicon carbide process unit or production furnace using the procedures in either paragraph (a) or (b) of this section. You must determine CH$_4$ process emissions in accordance with the procedures specified in paragraph (d) of this section.

(a) Calculate and report under this subpart the process CO$_2$ emissions by operating and maintaining CEMS according to the Tier 4 Calculation Methodology specified in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

(b) Calculate and report under this subpart the process CO$_2$ emissions using the procedures in paragraphs (b)(1) and (b)(2) of this section.

1 Use Equation BB–1 of this section to calculate the facility-specific emissions factor for determining CO$_2$ emissions. The carbon content must be measured monthly and used to calculate a monthly CO$_2$ emissions factor:

$$EF_{CO_2,n} = 0.65 \times CCF_n \times \left(\frac{44}{12}\right) \quad \text{(Eq. BB-1)}$$

Where:

- $EF_{CO_2,n}$ = CO$_2$ emissions factor in month n (metric tons CO$_2$/metric ton of petroleum coke consumed).
- 0.65 = Adjustment factor for the amount of carbon in silicon carbide product (assuming 35 percent of carbon input is in the carbide product).
- $CCF_n$ = Carbon content factor for petroleum coke consumed in month n from the supplier or as measured by the applicable method incorporated by reference in §98.7 according to §98.284(c) (percent by weight expressed as a decimal fraction).
- 44/12 = Ratio of molecular weights, CO$_2$ to carbon.

2 Use Equation BB–2 of this section to calculate annual CO$_2$ process emissions from all silicon carbide production:

$$CO_2 = \frac{2000}{2205} \left[ \sum_{n=1}^{12} T_n \times EF_{CO_2,n} \right] \quad \text{(Eq. BB-2)}$$

Where:

- $CO_2$ = Annual CO$_2$ emissions from silicon carbide production facility (metric tons CO$_2$).
- $T_n$ = Petroleum coke consumption in month n (tons).