COKE BURN-OFF RATE

1. APPLICABILITY

1.1 In order to determine compliance with Regulation 10-8-301 for particulate emissions from Fluid Catalytic Cracking Unit Catalyst Regenerators it is necessary to calculate the coke burn-off rate.

2. CALCULATION OF COKE BURN-OFF RATE

2.1

\[ R_c = 0.0186Q_{RA}(\%CO_2 + \%CO) + 0.1303Q_{RA}\left(\frac{\%CO}{2} + \%CO_2 + \%O_2\right) \]

Where:

- \( R_c \) = coke burn-off rate (lb/hr)
- 0.0186 = material balance factor divided by 100 (lb-min/hr-ft^3)
- \( \%CO_2 \) = percent carbon dioxide by volume, dry basis
- \( \%CO \) = percent carbon monoxide by volume, dry basis
- 0.1303 = material balance factor divided by 100 (lb-min/hr-ft^3)
- \( Q_{RA} \) = air rate to fluid catalyst cracking unit catalyst regenerator, as determined from fluid catalytic cracking unit control room instrumentation (sdcf/min)
- 0.0062 = material balance factor divided by 100 (lb-min/hr-ft^3)

3. REFERENCE

3.1 40 CFR 60.106. Test Methods and Procedures Part (A) (4).