GENERAL COMBUSTION EFFICIENCY EQUATIONS

Equation 1: ***"Combustion Efficiency" or "CE":***

$CE = [CO_2]/([CO_2] + [CO] + [OC])$

where:

$[CO_2]$ = Concentration in volume percent or ppm-meters of carbon dioxide in the combusted gas immediately above the Combustion Zone

$[CO]$ = Concentration in volume percent or ppm-meters of carbon monoxide in the combusted gas immediately above the Combustion Zone

$[OC]$ = Concentration in volume percent or ppm-meters of the sum of all organic carbon compounds in the combusted gas immediately above the Combustion Zone, counting each carbon molecule separately where the concentration of each individual compound is multiplied by the number of carbon atoms it contains before summing (*e.g.*, 0.1 volume percent ethane shall count as 0.2 percent OC because ethane has two carbon atoms)

For purposes of using the *CE* equation, the unit of measurement for CO_2, CO, and OC must be the same; that is, if "volume percent" is used for one compound, it must be used for all compounds. "Volume percent" cannot be used for one or more compounds and "ppm-meters" for the remainder.

Equation 2: ***"Center Steam Mass Flow Rate" or "$\dot{m}_{s\text{-}cen}$":***

$\dot{m}_{s\text{-}cen} = Q_{s\text{-}cen} \times (18/385.5)$

where:

$Q_{s\text{-}cen}$ = Center Steam Volumetric Flow Rate

Equation 3: ***"Total Steam Mass Flow Rate" or "$\dot{m}_s$":***

$\dot{m}_s = Q_s \times (18/385.5)$

where:

Q_s = Total Steam Volumetric Flow Rate

Equation 4: ***"Vent Gas Mass Flow Rate"* or "$\dot{m}_{vg}$":**

$\dot{m}_{vg} = Q_{vg} \times (MW_{vg}/385.5)$

where:

Q_{vg} = Vent Gas Volumetric Flow Rate

MW_{vg} = Molecular Weight, in pounds per pound-mole, of the Vent Gas, as measured by the Vent Gas Average Molecular Weight Analyzer described in Paragraph 19 of this Consent Decree