

For Discussion Purposes Only

Proposed New BARCT and Cost Effectiveness

Subsumed Rule/CM	Rule-CM Description	Tier 1 Emission Factor	Tier 1 Emission Factor Units	Basis for BARCT	New Proposed BARCT (lb/mmBtu)	Control Technology	Cost Effectiveness (10 year life)	Cost Effectiveness (15 year life)	Cost Effectiveness (25 year life)
90A-C-5	Misc. Combustion (Ovens, Kilns, Calciners, Dryers, Furnaces)	0.062	lb/mmBtu	Manufacturer Information, Permit Data for Retrofit (70 units currently at or below 30 ppm)	0.036 (30 ppm)	LoNOx Burner	\$9,500/ton		
90P-B-2	Petroleum Refinery FCC Units	70% reduction	lb/1000 BBL	Permit Data for Retrofit	1.439 lb/1000 BBL	SCR	\$15,000 - \$20,000/ton	\$12,000 - \$15,000/ton	\$9,000 - \$11,000/ton
90P-C-5	Metal Melting Furnaces	0.062 to 0.162	lb/mmBtu	Manufacturer Information, Permit Data (60 units currently at or below 45 ppm)	0.055 (45 ppm)	LoNOx Burner	\$8,500/ton		
	Heat Treating Furnaces						\$4,000/ton		
R1109	Refinery Boilers and Heaters > 110 mmBtu/hr	0.030	lb/mmBtu	Manufacturer Information, SJVUAPCD, Permit Data for Retrofit	0.006 (5 ppm)	SCR	\$32,000/ton	\$24,000/ton	\$17,500/ton
R1146	Boilers and Heaters ≥ 5 MM Btu/hr	0.045	lb/mmBtu	Manufacturer Information, SJVUAPCD, Permit Data for Retrofit	0.010 (9 ppm)	LoNOx/ Ultra LoNOx Burner	\$9,000 - \$10,000/ton**		
R1146-1	Boilers and Heaters 2-5 MM Btu/hr	0.038	lb/mmBtu		0.015 (12 ppm)				
R2009	Utility Boilers	Differs by facility		Permit Data for Retrofit	0.0109 (9 ppm)	SCR	\$3,100/ton*	\$2,300/ton*	

*Rule 2009 utility boiler cost effectiveness is based on pre-Rule 2009 emissions.

**Control costs were obtained from 3 manufacturers. Cost effectiveness calculations for two of the manufacturers yielded numbers in the range of \$9,000 to \$10,000 per ton while the third was much higher. The third manufacturer gave costs only for burners rated at ≥ 20 mmBtu/hr.

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