Calculations
Aluminum Melting Furnace #2

A/N: 404507

Given:

Fuel:	Natural gas	
Maximum Heat Input Rating, MM BTU/hr:	10	
Furnace Operating Load:	61%	
Aluminum Melting Rate, lb/hr	4,000	
Oxygen content in exhaust gases*, %	15.67%	
Exhaust volume factor,dscf exhaust/scf natural gas:	35.74	
Conversion Factors, ppm @ 3% O_2 to lb/MM BTU		
NOx	0.00121	
CO	0.00074	
Operating Schedule:		
hrs/day	24	
days/wk	7	
weeks/yr	52	
NOx Concentration*, ppm @ 3% O_2 (dry)	60	(Actual: 58.91)
CO Concentration*, ppm @ 3% O_2 (dry)	203	(Actual: 202.64)
*Source test results, By: Accurate Environmental Services, Test date: January 23, 06		
PM**	0.101	lb/ton
PM10**	0.063	lb/ton
**Source test results, By: AQMD, April 5, 7, 13, 15, 2005		
Emission Factors for Natural Gas Combustion, lb/MM BTU:		
ROG:	0.007	
NOx	0.073	4.898096
CO:	0.15	
SOx :	0.0008	
Controlled efficiency:		
PM:	0%	

Computations:

	RHC	*NOx*	*SOx*	*CO*	*PM* Uncontr.	*PM* Contr.	*PM10* Uncontr.	*PM10* Contr.
Factors (Combustion) ($lb/10^6$ BTU)	0.007	0.073	0.0008	0.1500				
lb/hr	0.04	0.44	0.005	0.91	0.202	0.20	0.13	0.13
lb/day								
Max.	1	11	0	22	4.848	5	3	3
Avg.	1	11	0	22	4.848	5	3	3
lb/yr	370.59	3,856.45	42.35	7,942.06				1,100.74

Exhaust volume:	5,673	dscfm
PM concentration:	0.004	gr/dscf
Fuel limit:	4,198,490	ft^3/month
Process Limit:	1,440	tons Al/month

NSR:

	VOC	NOx	SOx	CO	PM10
Existing	46	28	0	124	15
A/N 306209	0	0	0	0	0
A/N 404507	1	11	0	22	3
A/N 404511	0	0	0	0	0
A/N 444081	5	0	0	0	1
PTE	52	39	0	146	19
ERC required	7	13	0	0	0

ERC requirements:

	VOC	NOx		
A/N 404507	1	13		
A/N 444081	6	0		
Total	7	13		
Available*	14	7	*AQ004707	14 lbs VOC
Additional	0	6	*AQ005495	7 lbs NOx