COMPARISON OF December 2012 FINAL to December 2011 Reproposal and FINAL March 2011 BOILER MACT LIMITS and June 2010 PROPOSED BOILER MACT LIMITS

HAP/Fuel	Proposal	Final	Re-proposal	Dec-12	Factor Better	Proposal	Final	Re-proposal	Dec-12	Factor Better	Units	Output Based (lb/MMBtu steam output) - March 2011 to Dec 2012			
	Existing Boilers					New Boilers						Existing	Dec-12	New	Dec-12
Hg Biomass	0.9	4.6	3.1	5.7	1.8	0.2	3.5	0.86	0.8	0.9	lb/TBtu	4.5	6.4	3.4	0.87
PM Biomass	0.02	0.039	multiple	multiple	below	0.008	0.0011	multiple	multiple	NA	lb/MMBtu	0.038	multiple	0.0011	multiple
HCl Biomass	0.006	0.035	0.022	0.022	1.0	0.004	0.0022	0.022	0.022	1.0	lb/MMBtu	0.04	0.025	0.0021	0.025
Hg Coal	3	4.6	3.1	5.7	1.8	2	3.5	0.86	0.8	0.9	lb/TBtu	4.5	6.4	3.4	0.87
PM Coal	0.02	0.039	multiple	multiple	below	0.001	0.0011	multiple	multiple	below	lb/MMBtu	0.038	multiple	0.0011	multiple
HCl Coal	0.02	0.035	0.022	0.022	1.0	0.00006	0.0022	0.022	0.022	1.0	lb/MMBtu	0.04	0.025	0.0021	0.025
Hg Oil	4	3.5	26	2.0	0.1	0.3	0.21	0.49	0.48	1.0	lb/TBtu	3.3	2.5	0.2	0.53
Hg Oil non-continental	4	0.78	26	2.0	0.1	0.3	0.78	0.49	0.48	1.0	lb/TBtu	0.8	2.5	0.8	0.53
PM Oil	0.004	0.0075	multiple	multiple	below	0.002	0.0013	multiple	multiple	NA	lb/MMBtu	0.0073	multiple	0.001	multiple
HCl Oil	0.0009	0.00033	0.0012	0.0011	0.9	0.0004	0.0032	0.0012	0.00044	0.4	lb/MMBtu	0.003	1.40E-03	0.003	4.80E-04
Hg Gas 2	0.2	13	7.9	7.9	1.0	0.2	7.9	7.9	7.9	1.0	lb/TBtu	7.8	14	0.2	14
PM Gas 2	0.05	0.043	0.0067	0.0067	1.0	0.003	0.0067	0.0067	0.0067	1.0	lb/MMBtu	0.026	0.012	0.004	0.012
HCl Gas 2	0.000003	0.0017	0.0017	0.0017	1.0	0.000003	0.0017	0.0017	0.0017	1.0	lb/MMBtu	0.001	0.0029	0.003	0.0029
Or clean gas 2 can opt in to Gas 1 work practice if:	NA	Hg content <40 ug/m3				NA	Hg content <40 ug/m3								
Short-term/3 hour test	Existing Boilers					New Boilers						Existing	Dec-12	New	Dec-12
CO Biomass Wet Stoker/Sloped Grate/Other	560	490	790	1500	1.9	560	160	590	620	1.1	ppm at 3%O2	0.35	1.4	0.13	0.58
CO Biomass Kiln-Dried Stoker/Sloped Grate/Other	560	490	250	460	1.8		160	250	460	1.8	ppm at 3%O2		0.42		0.42
CO Biomass FB	250	430	370	470	1.3	40	260	230	230	1.0	ppm at 3%O2	0.28	0.46	0.18	0.22
CO Biomass Dutch/Pile	1010	470	810	770	1.0	1010	470	810	330	1.7	ppm at 3%O2	0.45	0.84	0.45	0.35
CO Biomass Suspension Burner	1010	470	58	2400	41.4	NA	NA	58	2400	NA	ppm at 3%O2	0.45	1.9	0.45	1.9
CO Biomass Fuel Cell	270	690	1500	1100	0.7	270	470	210	910	4.3	ppm at 3%O2	0.34	2.4	0.23	1.1
CO Biomass Hybrid Suspension/ Grate	NA	3500	3900	2800	0.7	NA	1500	1500	1100	0.7	ppm at 3%O2	2	2.8	0.84	1.4
CO Coal pulverized	90	160	41	130	3.2	90	12	9	130	14.4	ppm at 3%O2	0.14	0.11	0.01	0.11
CO Coal stoker	50	270	220	160	0.7	7	6	19	130	6.8	ppm at 3%O2	0.25	0.14	0.005	0.12
CO Coal FB	30	82	56	130	2.3	30	18	17	130	7.6	ppm at 3%O2	0.08	0.12	0.02	0.11
CO Coal FBHE				140					140				0.13		0.12
CO Oil - Heavy	1	10	10	130	13.0	1	3	10	130	13.0	ppm at 3%O2	0.0083	0.13	0.0026	0.13
CO Oil - Light	1	10	7	130	18.6	1	3	3	130	43.3	ppm at 3%O2	0.0083	0.13	0.0026	0.13
CO Oil non-continental	1	160	18	130	7.2	1	51	18	130	7.2	ppm at 3%O2	0.13	0.13	0.043	0.13
CO Gas2	1	9	4	130	32.5	1	3	4	130	32.5	ppm at 3%O2	0.005	0.16	0.002	0.16
Long-term CEMS limit (30 day avg except as noted)				30 day except as noted					30 day except as noted						
CO Biomass Wet Stoker/Sloped Grate/Other	NA	NA	410	720	1.8	NA	NA	410	390	1.0	ppm at 3%O2				
CO Biomass Kiln-Dried Stoker/Sloped Grate/Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ppm at 3%O2				
CO Biomass FB	NA	NA	180	310	1.7	NA	NA	180	310	1.7	ppm at 3%O2				
CO Biomass Fuel Cell	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ppm at 3%O2				
CO Biomass Suspension Burner	NA	NA	1400	2000 (10 day)	1.4	NA	NA	1400	2000 (10 day)	1.4	ppm at 3%O2				
CO Biomass Dutch/Pile	NA	NA	440	520 (10 day)	1.2	NA	NA	440	520 (10 day)	1.2	ppm at 3%O2				
CO Biomass Hybrid Suspension/ Grate	NA	NA	730	900	1.2	NA	NA	730	900	1.2	ppm at 3%O2				
CO Coal stoker	NA	NA	34	340	10.0	NA	NA	34	340	10.0	ppm at 3%O2				
FB with heat exchanger				150	NA				150	NA					
CO Coal FB	NA	NA	59	230	3.9	NA	NA	59	230	3.9	ppm at 3%O2				
CO Coal pulverized	NA	NA	28	320	11.4	NA	NA	28	320	11.4	ppm at 3%O2				
CO Oil - Heavy	NA	NA	18	na	NA	NA	NA	18	na	NA	ppm at 3%O2				
CO Oil - Light	NA	NA	60	na	NA	NA	NA	60	na	NA	1 day block average				
CO Oil non-continental	NA	NA	91	na	NA	NA	NA	91	na	NA	3 hour rolling average				
HAP/Fuel	**Proposal**	**Final**	**Re-proposal**	**Dec-12**	**Factor Better**	**Proposal**	**Final**	**Re-proposal**	**Dec-12**	**Factor Better**	**Units**	**Output Based (lb/MMBtu steam output) - March 2011 to December 2012**			
	Existing Boilers					New Boilers						Existing	Dec-12	New	Dec-12
D/F Biomass stoker	0.004	0.005	work practice	work practice	NA	0.00005	0.005	work practice	work practice	NA	ng/dscm at 7%O2	4.40E-12	work practice	4.40E-12	work practice
D/F Biomass FB	0.004	0.02	work practice	work practice	NA	0.007	0.02	work practice	work practice	NA	ng/dscm at 7%O2	1.80E-11	work practice	1.80E-11	work practice
D/F Biomass Dutch Oven	0.03	0.2	work practice	work practice	NA	0.03	0.2	work practice	work practice	NA	ng/dscm at 7%O2	1.80E-10	work practice	1.80E-10	work practice
D/F Biomass Suspension Burner	NA	NA	work practice	work practice	NA	NA	NA	work practice	work practice	NA	NA	NA	work practice	NA	work practice
D/F Biomass Fuel Cell	0.02	4	work practice	work practice	NA	0.0005	0.003	work practice	work practice	NA	ng/dscm at 7%O2	3.50E-09	work practice	2.86E-12	work practice
D/F Biomass Hybrid Suspension/Grate	NA	0.2	work practice	work practice	NA	NA	0.2	work practice	work practice	NA	ng/dscm at 7%O2	1.80E-10	work practice	1.80E-10	work practice

COMPARISON OF December 2012 FINAL to December 2011 Reproposal and FINAL March 2011 BOILER MACT LIMITS and June 2010 PROPOSED BOILER MACT LIMITS

D/F Coal pulverized	0.004	0.004	work practice	work practice	NA	0.002	0.003	work practice	work practice	NA	ng/dscm at 7%O2	3.70E-12	work practice	2.80E-12	work practice
D/F Coal stoker	0.003	0.003	work practice	work practice	NA	0.003	0.003	work practice	work practice	NA	ng/dscm at 7%O2	2.80E-12	work practice	2.80E-12	work practice
D/F Coal FB	0.002	0.002	work practice	work practice	NA	0.00003	0.002	work practice	work practice	NA	ng/dscm at 7%O2	1.80E-12	work practice	1.80E-12	work practice
D/F Oil	0.002	4	work practice	work practice	NA	0.002	0.002	work practice	work practice	NA	ng/dscm at 7%O2	9.20E-09	work practice	4.60E-12	work practice
D/F Gas2	0.009	0.08	work practice	work practice	NA	0.009	0.08	work practice	work practice	NA	ng/dscm at 7%O2	3.90E-11	work practice	4.10E-12	work practice

	Existing																			New	
	Proposal	Final	Re-proposal	Dec-12	Factor Better	Proposal	Final	Re-proposal	Dec-12	Factor Better	Units	Output Based (lb/MMBtu steam output) - March 2011 to December 2012				TSM, lb/MMBtu	TSM, lb/MMBtu	TSM, lb/MMBtu	Factor Better	Output Based lb/MMBtu steam	TSM, lb/MMBtu	Output Based lb/MMBtu steam
	Existing Boilers					New Boilers						Existing	Dec-12	New	Dec-12	2004	Reprop	Dec-12		Dec-12	Dec-12	Dec-12
PM Biomass Wet Stoker/Sloped Grate/Other	0.02	0.039	0.029	0.037	1.3	lb/MMBtu	0.001	0.029	0.03	1.0	lb/MMBtu	0.35	0.043	0.13	0.035	0.001	5.7E-05	2.4E-04	4.21	2.8E-04	2.6E-05	2.7E-05
PM Biomass Kiln-Dried Stoker/Sloped Grate/Other	0.02	0.039	0.32	0.32	1.0	lb/MMBtu	0.001	0.32	0.03	0.1	lb/MMBtu	0.35	0.37	0.13	0.035	0.001	4.0E-03	4.0E-03	1.00	4.6E-03	4.0E-03	4.2E-03
PM Biomass FB	0.02	0.039	0.11	0.11	1.0	lb/MMBtu	0.001	0.0098	0.0098	1.0	lb/MMBtu	0.28	0.14	0.18	0.012	0.001	1.2E-03	1.2E-03	1.00	1.5E-03	8.3E-05	1.1E-04
PM Biomass Dutch/Pile	0.02	0.039	0.036	0.28	7.8	lb/MMBtu	0.001	0.036	0.0032	0.1	lb/MMBtu	0.45	0.39	0.45	0.0043	0.001	2.4E-04	2.0E-03	8.33	2.8E-03	3.9E-05	5.2E-05
PM Biomass Suspension Burner	0.02	0.039	0.051	0.051	1.0	lb/MMBtu	0.001	0.051	0.03	0.6	lb/MMBtu	0.45	0.052	0.45	0.031	0.001	1.1E-03	6.5E-03	5.91	6.6E-02	6.5E-03	6.6E-03
PM Biomass Fuel Cell	0.02	0.039	0.033	0.020	0.6	lb/MMBtu	0.001	0.011	0.02	1.8	lb/MMBtu	0.34	0.055	0.23	0.03	0.001	4.9E-05	5.8E-03	118.37	1.6E-02	2.9E-05	5.1E-05
PM Biomass Hybrid Suspension/ Grate	0.02	0.039	0.44	0.44	1.0	lb/MMBtu	0.001	0.026	0.026	1.0	lb/MMBtu	2	0.55	0.84	0.033	0.001	4.9E-04	4.5E-04	0.92	5.7E-04	4.4E-04	5.5E-04
PM Coal pulverized	0.02	0.039	0.044	0.040	0.9	lb/MMBtu	0.001	0.0013	0.0011	0.8	lb/MMBtu	0.14	0.042	0.01	0.0011	0.001	5.9E-05	5.3E-05	0.90	5.6E-05	2.3E-05	2.7E-05
PM Coal stoker	0.02	0.039	0.028	0.040	1.4	lb/MMBtu	0.001	0.028	0.0011	0.0	lb/MMBtu	0.25	0.042	0.005	0.0011	0.001	8.3E-05	5.3E-05	0.64	5.6E-05	2.3E-05	2.7E-05
PM Coal FB	0.02	0.039	0.088	0.040	0.5	lb/MMBtu	0.001	0.0011	0.0011	1.0	lb/MMBtu	0.08	0.042	0.02	0.0011	0.001	1.7E-05	5.3E-05	3.12	5.6E-05	2.3E-05	2.7E-05
PM Oil - heavy	0.004	0.0075	0.062	0.062	1.0	lb/MMBtu	0.0013	0.013	0.013	1.0	lb/MMBtu	0.0083	0.075	0.0026	0.015			2.0E-04	NA	2.5E-04	7.5E-05	8.2E-05
PM Oil - light	0.004	0.0075	0.0034	0.0079	2.3	lb/MMBtu	0.0013	0.0011	0.0011	1.0	lb/MMBtu	0.0083	9.60E-03	0.0026	0.0012			6.2E-05	NA	7.5E-05	2.9E-05	3.2E-05
PM Oil non-continental	0.004	0.0075	0.008	0.27	33.8	lb/MMBtu	0.0013	0.008	0.023	2.9	lb/MMBtu	0.13	0.33	0.043	0.025			8.6E-04	NA	1.1E-03	8.6E-04	9.4E-04
PM Gas2	0.05	0.043	0.0067	0.0067	1.0	lb/MMBtu	0.0067	0.0067	0.0067	1.0	lb/MMBtu	0.005	0.012	0.002	0.012	NA	2.4E-04	2.1E-04	0.88	3.5E-04	2.1E-04	3.5E-04

Follow work practices during periods of startup and shutdown. Startup and Shutdown are defined, work practice requirements are specified.