

## Appendix A: Test schedule

Test no.	Controller	Inputs		Results							Feed materials consumed			
	0 = manual 1 = MPC	% C in scrap (Random)	DRI: % metallization	%C	Tapping Temp.	Steel mass	Relative Pressure	CO Emission	Avg Foam Depth	Max off gas temp	Oxygen (kg)	DRI (ton)	Graphite (kg)	Off-gas fan power (MW)
1	1	0.00	87.50	0.0738	1854	159.1	-32.3	0.95	60	762	6418	29.8	395	1.55
2	0	0.00	87.49	0.0721	1836	163.8	-27.5	0.988	86.2	828	5414	35	498	1.32
3	1	0.33	87.48	0.0768	1852	163.7	-28.7	1.31	55.6	762	6490	35.1	368	1.46
4	0	0.23	87.46	0.0778	1835	164.1	-27.4	1.1	90	842	5414	35	498	1.32
5	1	0.03	87.45	0.0713	1854	157.8	-32.8	0.92	61.9	762	6877	28.8	439	1.56
6	1	0.14	87.44	0.073	1853	160.3	-30.9	1.11	58.4	762	6479	31.2	386	1.52
7	1	0.23	87.43	0.0746	1852	158.4	-30.9	1.15	59.7	762	6653	29.2	400	1.52
8	0	0.45	87.42	0.0841	1834	164.3	-27.3	1.21	93.7	851	5414	35	498	1.32
9	0	0.47	87.40	0.0847	1834	164.4	-27.3	1.22	94.1	852	5414	35	498	1.32
10	1	0.01	87.39	0.0694	1856	157.7	-32.53	1.01	61.6	762	6924	28.6	444	1.55
11	0	0.30	87.38	0.0797	1835	164.2	-37.4	1.13	91	845	5414	35	498	1.32
12	0	0.02	87.37	0.0726	1836	163.8	-27.5	0.998	86.5	830	5414	35	498	1.32
13	1	0.04	87.36	0.0699	1856	157	-32.3	1.02	59.7	761	6826	27.8	425	1.55
14	0	0.34	87.35	0.0809	1834	164.2	-27.4	1.16	91.7	847	5414	35	498	1.32
15	1	0.15	87.33	0.0743	1854	159.6	-31	1.11	60.8	763	6532	30.3	401	1.52
16	1	0.04	87.32	0.0738	1854	159.4	-32.4	0.93	59.8	762	6475	30.2	398	1.55
17	0	0.01	87.31	0.0723	1836	163.8	-27.5	0.993	86.3	829	5414	35	498	1.32
18	1	0.00	87.30	0.071	1856	158.3	-31.7	1.05	63.2	763	6681	28.9	434	1.54
19	1	0.39	87.29	0.0761	1853	162.3	-28.4	1.39	56.6	762	6507	33.6	367	1.46
20	0	0.16	87.27	0.076	1836	164	-27.5	1.07	88.7	838	5414	35	498	1.32
21	0	0.15	87.26	0.0758	1836	164	-27.5	1.06	88.5	837	5414	35	498	1.32
22	0	0.04	87.25	0.073	1836	163.8	-27.5	1.01	86.8	831	5414	35	498	1.32
23	1	0.20	87.24	0.0758	1854	159.9	-30.1	1.2	60.8	762	6477	30.8	391	1.51
24	1	0.30	87.23	0.0764	1853	161.7	-28.7	1.33	58.7	762	6445	32.8	377	1.48
25	0	0.08	87.21	0.074	1836	163.8	-27.5	1.03	87.4	833	5414	35	498	1.32
26	1	0.30	87.20	0.0765	1852	162.7	-29.7	1.26	57.7	762	6363	33.9	366	1.48
27	1	0.22	87.19	0.0778	1853	160.1	-30.3	1.17	63.5	761	6435	30.8	398	1.51
28	0	0.40	87.18	0.0826	1835	164.2	-27.37	1.18	92.8	849	5414	35	498	1.32
29	0	0.18	87.17	0.0765	1836	164	-27.47	1.08	89	839	5414	35	498	1.32

Test no.	Controller	Inputs			Results						Feed materials consumed			
	0 = manual	% C in scrap	DRI: %	%C	Tapping	Steel	Relative	CO	Avg Foam	Max off	Oxygen	DRI	Graphite	Off-gas fan
	1 = MPC	(Random)	metallization		Temp.	mass	Pressure	Emission	Depth	gas temp	(kg)	(ton)	(kg)	power (MW)
30	1	0.41	87.15	0.0775	1852	165.3	-26.9	1.48	55	763	6517	37.1	364	1.41
31	1	0.49	87.14	0.0776	1850	168.9	-25.5	1.63	54.9	765	6765	41.4	383	1.38
32	1	0.47	87.13	0.0776	1852	166.9	-26.3	1.57	54.7	763	6594	39	366	1.4
33	0	0.32	87.12	0.0803	1835	164.1	-27.4	1.15	91.4	846	5414	35	498	1.32
34	1	0.25	87.11	0.0764	1852	160.1	-30.7	1.13	58.8	762	6479	31.1	381	1.51
35	0	0.31	87.10	0.08	1835	164.1	-27.4	1.14	91.2	845	5414	35	498	1.32
36	0	0.02	87.08	0.0771	1836	163.9	-27.5	1.09	89.4	840	5414	35	498	1.32
37	1	0.05	87.07	0.0722	1854	158.1	-32	1.04	61.3	762	6634	28.9	417	1.55
38	0	0.39	87.06	0.0823	1835	164.1	-27.4	1.18	92.7	849	5414	35	498	1.32
39	1	0.13	87.05	0.0721	1853	157.7	-31.8	1.06	61.6	762	6851	28.6	433	1.54
40	0	0.44	87.04	0.0838	1835	164.2	-27.3	1.2	93.5	851	5414	35	498	1.32
41	0	0.18	87.02	0.0765	1836	163.9	-27.5	1.08	89	839	5414	35	498	1.32
42	1	0.26	87.01	0.0749	1853	161	-30.4	1.18	57.8	762	6550	32.2	382	1.51
43	0	0.29	87.00	0.0795	1836	164	-27.4	1.13	90.9	844	5414	35	498	1.32
44	0	0.34	86.99	0.0809	1836	164.1	-27.4	1.16	91.8	847	5414	35	498	1.32
45	0	0.05	86.98	0.0733	1837	163.7	-27.5	1.01	87	832	5414	35	498	1.32
46	0	0.35	86.96	0.0811	1836	164.1	-27.4	1.16	91.9	847	5414	35	498	1.32
47	1	0.37	86.95	0.0759	1852	161.2	-29.2	1.32	58.4	762	6568	32.4	380	1.48
48	1	0.31	86.94	0.0751	1852	160.3	-30.1	1.25	60.3	762	6647	31.3	400	1.51
49	0	0.31	86.93	0.08	1836	164	-27.4	1.14	91.2	845	5414	35	498	1.32
50	0	0.15	86.92	0.0758	1837	163.8	-27.5	1.06	88.6	837	5414	35	498	1.32
51	1	0.21	86.90	0.0761	1853	159	-30.4	1.15	61.9	762	6592	30.1	402	1.51
52	0	0.12	86.89	0.075	1837	163.8	-27.5	1.05	88.1	836	5414	35	498	1.32
53	0	0.09	86.88	0.0743	1837	163.7	-27.5	1.03	87.6	834	5414	35	498	1.32
54	0	0.34	86.87	0.0809	1836	164	-27.4	1.16	91.8	847	5414	35	498	1.32
55	1	0.01	86.86	0.0715	1855	159.4	-31.6	1.03	59	762	6446	30.4	394	1.54
56	1	0.37	86.85	0.0771	1851	163.3	-27.7	1.4	56.4	762	6528	34.9	373	1.44
57	1	0.12	86.83	0.0752	1853	158.8	-31.4	1.04	61.6	762	6510	29.6	403	1.53
58	1	0.11	86.82	0.0749	1854	157.8	-31	1.11	63.2	762	6562	28.5	412	1.53
59	0	0.24	86.81	0.0781	1837	163.9	-27.4	1.11	90.1	842	5414	35	498	1.32
60	1	0.11	86.80	0.073	1853	157.4	-31	1.13	59.7	762	6610	28.4	402	1.52
61	0	0.16	86.79	0.076	1837	163.8	-27.4	1.07	88.7	838	5414	35	498	1.32
62	0	0.03	86.77	0.0728	1838	163.6	-27.5	1	86.7	830	5414	35	498	1.32



Test no.	Controller	Inputs		Results							Feed materials consumed			
	0 = manual 1 = MPC	% C in scrap (Random)	DRI: % metallization	%C	Tapping Temp.	Steel mass	Relative Pressure	CO Emission	Avg Foam Depth	Max off gas temp	Oxygen (kg)	DRI (ton)	Graphite (kg)	Off-gas fan power (MW)
63	1	0.36	86.76	0.0767	1852	161.5	-28.4	1.38	58.5	762	6529	32.8	380	1.46
64	0	0.23	86.75	0.0778	1837	163.9	-27.4	1.1	89.9	842	5414	35	498	1.32
65	1	0.42	86.74	0.0777	1853	164	-28.6	1.38	57.9	762	6397	35.4	365	1.46
66	0	0.14	86.73	0.0755	1838	163.9	-27.5	1.06	88.4	837	5414	35	498	1.32
67	1	0.20	86.71	0.0765	1853	157.9	-31.7	1.08	62.7	762	6476	28.7	394	1.53
68	1	0.02	86.70	0.0723	1855	159	-32.1	1.02	63.8	761	6583	29.7	427	1.55
69	0	0.09	86.69	0.0743	1838	163.7	-27.5	1.03	87.6	834	5414	35	498	1.32
70	0	0.07	86.68	0.074	1838	163.6	-27.5	1.02	87.3	833	5414	35	498	1.32
71	1	0.22	86.67	0.0753	1854	160.6	-29.4	1.24	59.5	763	6455	31.8	386	1.49
72	1	0.08	86.65	0.076	1853	159.9	-31.5	1.03	61.3	762	6288	30.8	385	1.53
73	0	0.08	86.64	0.0738	1838	163.6	-27.5	1.03	87.5	833	5414	35	498	1.32
74	1	0.22	86.63	0.0767	1853	161.3	-30.8	1.14	61.5	762	6417	32.4	391	1.52
75	1	0.02	86.62	0.072	1857	158.5	-31.5	1.06	57.7	762	6383	29.6	379	1.54
76	1	0.09	86.61	0.071	1855	158	-32.1	1.03	60.7	762	6832	29.3	426	1.54
77	1	0.05	86.60	0.072	1855	157.2	-31.5	1.06	60.2	762	6659	28.2	411	1.54
78	1	0.30	86.58	0.0775	1852	160.7	-30.9	1.12	59.3	762	6464	31.9	378	1.51
79	1	0.49	86.57	0.0786	1850	168.6	-26.1	1.58	55.8	765	6547	41	370	1.39
80	0	0.35	86.56	0.0811	1837	163.9	-27.4	1.16	92	847	5414	35	498	1.32
81	0	0.23	86.55	0.0778	1838	163.8	-27.4	1.1	89.9	842	5414	35	498	1.32
82	0	0.17	86.54	0.0763	1838	163.7	-27.5	1.07	88.9	839	5414	35	498	1.32
83	1	0.41	86.52	0.0772	1851	164.2	-29	1.27	56.2	762	6657	36	382	1.46
84	0	0.39	86.51	0.0823	1837	164	-27.4	1.18	92.7	849	5414	35	498	1.32
85	0	0.13	86.50	0.0752	1838	163.6	-27.5	1.05	88.3	836	5414	35	498	1.32
86	0	0.32	86.49	0.0803	1837	163.9	-27.4	1.15	91.4	846	5414	35	498	1.32
87	1	0.37	86.48	0.0771	1854	162.8	-27.7	1.43	56.9	763	6428	34.4	365	1.45
88	1	0.18	86.46	0.077	1852	161.4	-30.5	1.12	62.3	762	6468	32.5	404	1.51
89	1	0.43	86.45	0.0783	1850	167.7	-26.5	1.51	56.2	762	6492	39.9	372	1.41
90	1	0.10	86.44	0.0739	1853	158.3	-31.6	1.05	64.6	763	6733	29.4	434	1.53
91	1	0.29	86.43	0.0766	1854	160.6	-29.8	1.23	59.4	762	6409	31.8	374	1.5
92	1	0.19	86.42	0.0742	1853	160.9	-32.2	0.998	60.4	761	6638	32.2	409	1.54
93	0	0.34	86.40	0.0808	1837	163.9	-27.4	1.16	91.8	847	5414	35	498	1.32
94	0	0.00	86.39	0.0721	1839	163.5	-27.5	0.988	86.2	829	5414	35	498	1.32
95	0	0.26	86.38	0.0786	1838	163.8	-27.4	1.12	90.4	843	5414	35	498	1.32

Test no.	Controller	Inputs			Results						Feed materials consumed			
	0 = manual 1 = MPC	% C in scrap (Random)	DRI: % metallization	%C	Tapping Temp.	Steel mass	Relative Pressure	CO Emission	Avg Foam Depth	Max off gas temp	Oxygen (kg)	DRI (ton)	Graphite (kg)	Off-gas fan power (MW)
96	1	0.20	86.37	0.0749	1854	159.1	-30	1.21	57.6	762	6442	30.3	373	1.5
97	0	0.20	86.36	0.077	1838	163.7	-27.5	1.09	89.4	840	5414	35	498	1.32
98	1	0.48	86.35	0.0772	1849	166.6	-26.6	1.56	56.9	764	6739	38.8	394	1.41
99	0	0.37	86.33	0.0817	1838	163.9	-27.4	1.17	92.3	848	5414	35	498	1.32
100	0	0.45	86.32	0.0841	1837	164	-27.3	1.21	93.8	851	5414	35	498	1.32
101	0	0.20	86.31	0.077	1839	163.7	-27.5	1.09	89.4	840	5414	35	498	1.32
102	1	0.38	86.30	0.0781	1853	161.1	-28	1.41	58.8	762	6318	32.5	357	1.46
103	0	0.28	86.29	0.0792	1838	163.8	-27.4	1.13	90.8	844	5414	35	498	1.32
104	0	0.30	86.27	0.0797	1838	163.8	-27.4	1.14	91.1	845	5414	35	498	1.32
105	0	0.46	86.26	0.0844	1837	164	-27.3	1.21	94	851	5414	35	498	1.32
106	0	0.23	86.25	0.0778	1839	163.7	-27.4	1.1	89.9	842	5414	35	498	1.32
107	1	0.21	86.24	0.077	1852	159.8	-31.2	1.07	64.4	762	6599	30.8	418	1.52
108	1	0.02	86.23	0.0742	1854	158	-30.8	1.11	65	763	6490	28.7	420	1.53
109	1	0.10	86.21	0.0751	1853	158.4	-31.6	1.06	62.5	763	6437	29.4	398	1.53
110	1	0.10	86.20	0.0751	1852	158.3	-31.4	1.06	63.4	762	6520	29.1	412	1.53
111	0	0.22	86.19	0.0776	1839	163.7	-27.5	1.1	89.8	841	5414	35	498	1.32
112	0	0.13	86.18	0.0752	1839	163.5	-27.5	1.05	88.3	836	5414	35	498	1.32
113	1	0.45	86.17	0.0774	1854	164.1	-27.3	1.52	56.5	762	6400	35.8	358	1.43
114	0	0.27	86.15	0.0789	1839	163.7	-27.4	1.12	90.6	844	5414	35	498	1.32
115	0	0.37	86.14	0.0817	1838	163.8	-27.4	1.17	92.4	848	5414	35	498	1.32
116	1	0.13	86.13	0.0751	1853	159	-31.5	1.03	59.2	762	6586	30.5	397	1.53
117	0	0.28	86.12	0.0792	1839	163.7	-27.4	1.13	90.8	844	5414	35	498	1.32
118	0	0.11	86.11	0.0747	1840	163.5	-27.5	1.04	88	835	5414	35	498	1.32
119	0	0.31	86.10	0.08	1839	163.7	-27.4	1.14	91.3	845	5414	35	498	1.32
120	0	0.44	86.08	0.0837	1838	163.9	-27.3	1.2	93.6	851	5414	35	498	1.32
121	1	0.19	86.07	0.0731	1853	157.7	-32.1	1.09	62	762	6726	28.6	417	1.54
122	0	0.27	86.06	0.0789	1839	163.7	-27.4	1.12	90.6	844	5414	35	498	1.32
123	1	0.45	86.05	0.0775	1852	166.3	-26.1	1.57	53.4	763	6304	38.7	334	1.39
124	0	0.35	86.04	0.0811	1839	163.8	-27.4	1.16	92	847	5414	35	498	1.32
125	1	0.07	86.02	0.0734	1854	160.5	-30.8	1.09	59.3	762	6400	31.8	390	1.52
126	1	0.06	86.01	0.074	1854	157.3	-31.8	1.04	62.5	762	6599	28.3	413	1.54
127	1	0.43	86.00	0.077	1854	162.1	-28.1	1.39	54.6	762	6471	34.1	350	1.45
128	0	0.21	85.99	0.0773	1839	163.6	-27.5	1.09	89.6	841	5414	35	498	1.32



Test no.	Controller		Inputs			Results						Feed materials consumed			
	0 = manual	1 = MPC	% C in scrap (Random)	DRI: % metallization	%C	Tapping Temp.	Steel mass	Relative Pressure	CO Emission	Avg Foam Depth	Max off gas temp	Oxygen (kg)	DRI (ton)	Graphite (kg)	Off-gas fan power (MW)
	129	0	0	0.48	85.98	0.085	1838	163.9	-27.3	1.22	94.3	852	5414	35	498
130	0	0	0.41	85.96	0.0829	1839	163.8	-27.4	1.19	93.1	850	5414	35	498	1.32
131	0	0	0.21	85.95	0.0773	1840	163.6	-27.5	1.09	89.6	841	5414	35	498	1.32
132	0	0	0.28	85.94	0.0792	1839	163.6	-27.4	1.13	90.8	844	5414	35	498	1.32
133	0	0	0.04	85.93	0.073	1841	163.4	-27.5	1.01	86.9	831	5414	35	498	1.32
134	0	0	0.18	85.92	0.0765	1840	163.5	-27.5	1.08	89.1	839	5414	35	498	1.32
135	0	0	0.08	85.90	0.074	1840	163.4	-27.5	1.03	87.5	834	5414	35	498	1.32
136	0	0	0.44	85.89	0.0837	1839	163.8	-27.3	1.2	93.6	851	5414	35	498	1.32
137	0	0	0.33	85.88	0.0806	1839	163.7	-27.4	1.15	91.7	846	5414	35	498	1.32
138	0	0	0.32	85.87	0.0803	1839	163.7	-27.4	1.15	91.5	846	5414	35	498	1.32
139	0	0	0.15	85.86	0.0757	1840	163.5	-27.5	1.06	88.6	838	5414	35	498	1.32
140	1	1	0.20	85.85	0.0774	1853	160.5	-29.7	1.18	60.1	762	6285	31.8	372	1.5
141	1	1	0.36	85.83	0.0781	1852	161.2	-29.1	1.33	63	762	6441	32.4	390	1.48
142	1	1	0.15	85.82	0.0736	1854	157.5	-31.6	1.08	60.6	762	6645	28.7	406	1.53
143	1	1	0.09	85.81	0.0733	1854	158.5	-31.6	1.06	61.6	763	6685	29.9	417	1.53
144	0	0	0.39	85.80	0.0823	1839	163.7	-27.4	1.18	92.7	849	5414	35	498	1.32
145	1	1	0.09	85.79	0.075	1854	159.8	-31.4	1.06	61.7	762	6371	31	394	1.53
146	0	0	0.43	85.77	0.0834	1839	163.7	-27.4	1.2	93.5	850	5414	35	498	1.32
147	1	1	0.38	85.76	0.0783	1851	162.7	-28	1.39	58.4	762	6421	34.4	370	1.45
148	0	0	0.11	85.75	0.0747	1841	163.4	-27.5	1.04	88	835	5414	35	498	1.32
149	1	1	0.17	85.74	0.075	1853	158.1	-30	1.19	60.5	762	6528	29.2	396	1.5
150	0	0	0.17	85.73	0.0763	1840	163.4	-27.5	1.07	89	839	5414	35	498	1.32
151	0	0	0.36	85.71	0.0814	1840	163.6	-27.4	1.17	92.2	848	5414	35	498	1.32
152	0	0	0.33	85.70	0.0806	1840	163.6	-27.4	1.15	91.7	846	5414	35	498	1.32
153	1	1	0.02	85.69	0.0698	1856	157.8	-32.5	0.943	59.3	762	6802	29.4	423	1.55
154	1	1	0.06	85.68	0.0728	1854	157.6	-32.5	0.983	62.4	762	6649	28.9	419	1.55
155	0	0	0.32	85.67	0.0803	1840	163.6	-27.4	1.15	91.5	846	5414	35	498	1.32
156	1	1	0.07	85.65	0.0726	1854	157.9	-31.8	1.03	60.9	762	6701	29.5	416	1.53
157	1	1	0.24	85.64	0.0774	1852	160	-30.3	1.19	64.2	762	6418	31.3	399	1.51
158	0	0	0.02	85.63	0.0725	1842	163.2	-27.5	0.999	86.6	830	5414	35	498	1.32
159	0	0	0.23	85.62	0.0778	1841	163.5	-27.4	1.1	90	842	5414	35	498	1.32
160	0	0	0.04	85.61	0.073	1842	163.2	-27.5	1.01	86.9	831	5414	35	498	1.32
161	0	0	0.24	85.60	0.0781	1841	163.5	-27.4	1.11	90.1	842	5414	35	498	1.32

Test no.	Controller	Inputs		Results							Feed materials consumed			
	0 = manual 1 = MPC	% C in scrap (Random)	DRI: % metallization	%C	Tapping Temp.	Steel mass	Relative Pressure	CO Emission	Avg Foam Depth	Max off gas temp	Oxygen (kg)	DRI (ton)	Graphite (kg)	Off-gas fan power (MW)
162	1	0.18	85.58	0.0769	1854	158.8	-30.1	1.21	66.4	762	6437	29.7	411	1.51
163	0	0.43	85.57	0.0834	1840	163.7	-27.4	1.2	93.5	850	5414	35	498	1.32
164	0	0.32	85.56	0.0803	1840	163.5	-27.4	1.15	91.5	846	5414	35	498	1.32
165	0	0.07	85.55	0.0737	1842	163.3	-27.5	1.02	87.4	833	5414	35	498	1.32
166	1	0.23	85.54	0.0774	1851	158.9	-29.5	1.26	66.4	763	6625	29.9	427	1.49
167	1	0.16	85.52	0.0746	1852	159.8	-31	1.11	62.3	762	6680	31.4	417	1.52
168	0	0.16	85.51	0.076	1841	163.3	-27.5	1.07	88.8	838	5414	35	498	1.32
169	0	0.43	85.50	0.0834	1840	163.7	-27.4	1.2	93.5	850	5414	35	498	1.32
170	1	0.14	85.49	0.0762	1854	158.1	-30.5	1.13	63.7	763	6435	29.2	401	1.52
171	0	0.31	85.48	0.08	1841	163.5	-27.4	1.14	91.3	845	5414	35	498	1.32
172	0	0.11	85.46	0.0747	1842	163.3	-27.5	1.04	88	835	5414	35	498	1.32
173	1	0.28	85.45	0.0749	1853	159.3	-29.2	1.31	61.9	762	6629	30.6	406	1.49
174	0	0.33	85.44	0.0806	1841	163.5	-27.4	1.15	91.7	846	5414	35	498	1.32
175	0	0.36	85.43	0.0814	1840	163.6	-27.4	1.17	92.2	848	5414	35	498	1.32
176	1	0.16	85.42	0.0754	1853	158.3	-31	1.14	65.1	762	6564	29.3	419	1.52
177	0	0.22	85.40	0.0776	1841	163.4	-27.4	1.1	89.8	841	5414	35	498	1.32
178	0	0.07	85.39	0.0737	1842	163.2	-27.5	1.02	87.4	833	5414	35	498	1.32
179	0	0.01	85.38	0.0723	1842	163.1	-27.5	0.994	86.5	829	5414	35	498	1.32
180	0	0.27	85.37	0.0789	1841	163.4	-27.4	1.12	90.7	844	5414	35	498	1.32
181	1	0.01	85.36	0.0706	1855	157.8	-32.9	0.945	61	761	6732	29.4	423	1.56
182	0	0.38	85.35	0.082	1841	163.5	-27.4	1.18	92.6	848	5414	35	498	1.32
183	0	0.08	85.33	0.074	1842	163.2	-27.5	1.03	87.5	834	5414	35	498	1.32
184	1	0.14	85.32	0.0735	1856	158	-30.5	1.2	61.8	762	6511	29.2	402	1.52
185	1	0.25	85.31	0.0764	1853	161.7	-30.4	1.14	58.5	762	6501	33.6	386	1.51
186	1	0.35	85.30	0.0772	1853	162.9	-29.3	1.27	58.2	762	6388	34.8	368	1.49
187	1	0.32	85.29	0.0755	1853	162.4	-30.1	1.21	57.2	762	6583	34.5	383	1.5
188	0	0.46	85.27	0.0843	1840	163.6	-27.3	1.21	94	851	5414	35	498	1.32
189	1	0.06	85.26	0.0736	1853	158.2	-32.5	0.974	63.5	762	6646	29.4	427	1.55
190	0	0.32	85.25	0.0803	1841	163.4	-27.4	1.15	91.5	846	5414	35	498	1.32
191	1	0.27	85.24	0.0772	1854	162	-28.9	1.29	57.6	762	6209	33.8	353	1.47
192	0	0.24	85.23	0.0781	1842	163.3	-27.4	1.11	90.2	842	5414	35	498	1.32
193	0	0.36	85.21	0.0814	1841	163.5	-27.4	1.17	92.2	848	5414	35	498	1.32
194	1	0.17	85.20	0.0753	1852	158.5	-31	1.11	62.5	762	6558	29.7	408	1.52



Test no.	Controller	Inputs		Results							Feed materials consumed			
	0 = manual 1 = MPC	% C in scrap (Random)	DRI: % metallization	%C	Tapping Temp.	Steel mass	Relative Pressure	CO Emission	Avg Foam Depth	Max off gas temp	Oxygen (kg)	DRI (ton)	Graphite (kg)	Off-gas fan power (MW)
195	0	0.10	85.19	0.0745	1843	163.2	-27.5	1.04	87.9	835	5414	35	498	1.32
196	0	0.04	85.18	0.073	1843	163.1	-27.5	1.01	86.9	831	5414	35	498	1.32
197	1	0.23	85.17	0.0758	1855	162.1	-29.1	1.25	57.3	762	6327	34	367	1.48
198	1	0.31	85.15	0.0762	1853	161.2	-30.3	1.22	58.8	762	6433	32.9	376	1.5
199	0	0.35	85.14	0.0811	1841	163.4	-27.4	1.16	92.1	847	5414	35	498	1.32
200	0	0.22	85.13	0.0776	1842	163.3	-27.4	1.1	89.8	841	5414	35	498	1.32
201	1	0.01	85.12	0.0731	1853	156.7	-31.9	0.993	61.4	762	6529	28	408	1.54
202	1	0.11	85.11	0.0763	1852	159.3	-30.9	1.08	61.6	761	6364	30.7	391	1.52
203	1	0.13	85.10	0.0734	1854	157.6	-31.1	1.13	60.3	763	6513	29	395	1.53
204	0	0.19	85.08	0.0768	1842	163.2	-27.5	1.08	89.3	840	5414	35	498	1.32
205	0	0.24	85.07	0.0781	1842	163.3	-27.4	1.11	90.2	842	5414	35	498	1.32
206	0	0.11	85.06	0.0747	1843	163.1	-27.5	1.04	88	835	5414	35	498	1.32
207	1	0.33	85.05	0.0796	1851	162.8	-28.9	1.32	63.7	762	6277	34.3	383	1.47
208	1	0.31	85.04	0.0752	1853	161.6	-30.2	1.24	59.1	762	6504	33.5	384	1.51
209	0	0.39	85.02	0.0823	1842	163.4	-27.4	1.18	92.8	849	5414	35	498	1.32
210	1	0.30	85.01	0.0768	1853	161	-30.4	1.2	60	761	6377	32.7	376	1.51
211	1	0.04	85.00	0.0709	1856	157.6	-32.1	1.01	61.3	762	6677	29.1	419	1.55
212	1	0.30	84.99	0.0784	1851	161	-29.7	1.23	61.1	762	6390	32.7	382	1.49
213	1	0.47	84.98	0.0783	1852	163.8	-27.3	1.52	56	762	6386	36	352	1.43
214	0	0.10	84.96	0.0745	1843	163	-27.5	1.04	87.9	835	5414	35	498	1.32
215	1	0.25	84.95	0.0764	1854	159.3	-30.6	1.22	62.1	762	6354	30.7	382	1.51
216	1	0.20	84.94	0.0763	1854	159.4	-29.8	1.22	61.3	762	6393	30.9	386	1.5
217	1	0.03	84.93	0.0744	1853	159.1	-32.8	0.911	62.2	761	6435	30.6	405	1.56
218	1	0.18	84.92	0.0746	1852	158.3	-31.1	1.14	64.8	762	6600	29.5	419	1.53
219	1	0.15	84.90	0.0724	1856	159.2	-30.5	1.18	60.6	762	6602	30.8	406	1.53
220	1	0.24	84.89	0.0766	1851	159.2	-30.3	1.2	64	763	6502	30.5	404	1.51
221	1	0.21	84.88	0.0754	1852	159.3	-30.9	1.16	60.2	762	6485	30.9	389	1.52
222	0	0.01	84.87	0.0723	1844	163	-27.5	0.994	86.5	829	5414	35	498	1.32
223	0	0.47	84.86	0.0846	1842	163.5	-27.3	1.22	94.2	852	5414	35	498	1.32
224	1	0.23	84.85	0.0767	1853	159	-31.2	1.15	65.6	761	6487	30.2	408	1.53
225	1	0.36	84.83	0.0762	1855	160.7	-28.7	1.39	56.1	762	6303	32.6	346	1.48
226	0	0.21	84.82	0.073	1844	163	-27.5	1.01	87	831	5414	35	498	1.32
227	1	0.04	84.81	0.0741	1854	157.2	-32.3	1.01	64.5	762	6504	28.5	415	1.54

Test no.	Controller	Inputs			Results						Feed materials consumed			
	0 = manual 1 = MPC	% C in scrap (Random)	DRI: % metallization	%C	Tapping Temp.	Steel mass	Relative Pressure	CO Emission	Avg Foam Depth	Max off gas temp	Oxygen (kg)	DRI (ton)	Graphite (kg)	Off-gas fan power (MW)
228	0	0.16	84.80	0.076	1843	163.1	-27.5	1.07	88.9	838	5414	35	498	1.32
229	0	0.06	84.79	0.0735	1844	163	-27.5	1.02	87.3	832	5414	35	498	1.32
230	0	0.19	84.77	0.0768	1843	163.1	-27.5	1.08	89	840	5414	35	498	1.32
231	1	0.05	84.76	0.0741	1855	157.9	-31.9	1.04	62.4	762	6368	29.3	396	1.54
232	0	0.31	84.75	0.08	1843	163.2	-27.4	1.14	91.4	845	5414	35	498	1.32
233	0	0.09	84.74	0.0742	1844	163	-27.5	1.03	87.7	834	5414	35	498	1.32
234	1	0.19	84.73	0.0766	1852	159.1	-30.6	1.15	65.6	763	6554	30.4	420	1.51
235	1	0.14	84.71	0.0726	1854	156.5	-31.4	1.15	62.9	762	6765	27.8	428	1.53
236	0	0.34	84.70	0.0808	1843	163.3	-27.4	1.16	91.9	847	5414	35	498	1.32
237	1	0.46	84.69	0.0788	1852	166.3	-26	1.6	58.6	763	6487	39	380	1.39
238	1	0.00	84.68	0.0708	1856	156.7	-31.8	1.04	62.7	762	6762	28.2	436	1.54
239	1	0.37	84.67	0.0793	1852	161.3	-27.6	1.44	60.5	762	6353	33.1	372	1.43
240	1	0.17	84.65	0.0741	1854	159.1	-31.2	1.08	59.9	762	6563	30.8	398	1.52
241	0	0.34	84.64	0.0808	1843	163.3	-27.4	1.16	91.9	847	5414	35	498	1.32
242	0	0.43	84.63	0.0834	1843	163.4	-27.4	1.2	93.5	850	5414	35	498	1.32
243	0	0.45	84.62	0.084	1842	163.4	-27.3	1.21	93.9	851	5414	35	498	1.32
244	0	0.30	84.61	0.0797	1843	163.2	-27.4	1.14	91.2	845	5414	35	498	1.32
245	0	0.20	84.60	0.077	1844	163.1	-27.5	1.09	89.5	840	5414	35	498	1.32
246	1	0.21	84.58	0.0765	1854	158.5	-30.9	1.14	64.3	762	6445	29.8	400	1.52
247	0	0.48	84.57	0.0849	1842	163.4	-27.3	1.22	94.4	852	5414	35	498	1.32
248	1	0.33	84.56	0.076	1852	160.5	-30.8	1.14	58.5	762	6678	32.8	391	1.51
249	0	0.44	84.55	0.0837	1843	163.3	-27.3	1.21	93.7	851	5414	35	498	1.32
250	1	0.06	84.54	0.0751	1852	157.7	-31.5	1.06	66.6	762	6524	28.9	428	1.54
251	1	0.05	84.52	0.0743	1854	157.8	-32.5	0.955	60.5	762	6339	29.3	385	1.55
252	1	0.08	84.51	0.0744	1853	157	-31.2	1.1	64	762	6517	28.2	413	1.53
253	1	0.20	84.50	0.0765	1852	159	-30.4	1.17	62.9	762	6512	30.5	404	1.51
254	0	0.27	84.49	0.0789	1844	163.1	-27.4	1.12	90.7	844	5414	35	498	1.32
255	1	0.41	84.48	0.0773	1852	163.5	-37.8	1.45	57.6	762	6410	35.7	367	1.44
256	1	0.17	84.46	0.0721	1855	158	-31.8	1.08	58.8	762	6609	29.8	394	1.54
257	1	0.11	84.45	0.0752	1853	158.9	-31.9	1.01	60.8	762	6446	30.6	394	1.53
258	1	0.39	84.44	0.0782	1852	162.6	-29.1	1.32	58	762	6315	34.8	358	1.47
259	1	0.05	84.43	0.0746	1853	157.5	-32.3	0.981	65.4	762	6585	28.9	426	1.55
260	1	0.31	84.42	0.0786	1851	160.3	-29.8	1.21	62.1	762	6337	32	378	1.5



Test no.	Controller	Inputs		Results							Feed materials consumed			
	0 = manual 1 = MPC	% C in scrap (Random)	DRI: % metallization	%C	Tapping Temp.	Steel mass	Relative Pressure	CO Emission	Avg Foam Depth	Max off gas temp	Oxygen (kg)	DRI (ton)	Graphite (kg)	Off-gas fan power (MW)
261	1	0.11	84.40	0.0767	1851	158.8	-30.9	1.07	65.6	762	6463	30.3	413	1.52
262	1	0.05	84.39	0.0731	1853	157.3	-31.7	1.02	61	762	6610	28.9	412	1.54
263	1	0.21	84.38	0.0769	1850	159.8	-31.6	1.04	62.5	761	6532	31.5	405	1.53
264	0	0.13	84.37	0.0752	1845	162.9	-27.5	1.05	88.4	837	5414	35	498	1.32
265	1	0.40	84.36	0.08	1852	161.6	-26.8	1.56	63.6	762	6312	33.3	378	1.43
266	0	0.38	84.35	0.082	1844	163.2	-27.4	1.18	92.7	848	5414	35	498	1.32
267	1	0.05	84.33	0.0733	1854	159	-31.8	0.981	60.5	762	6388	30.8	391	1.54
268	0	0.10	84.32	0.0745	1845	162.9	-27.5	1.04	87.9	835	5414	35	498	1.32
269	1	0.25	84.31	0.0742	1854	160.4	-30.9	1.17	58.4	762	6445	32.4	377	1.52
270	0	0.45	84.30	0.084	1844	163.2	-27.3	1.21	93.9	851	5414	35	498	1.32
271	0	0.09	84.29	0.0742	1845	162.8	-27.5	1.03	87.8	834	5414	35	498	1.32
272	1	0.01	84.27	0.0757	1854	158	-31.6	1.02	66.2	762	6395	29.3	417	1.54
273	1	0.40	84.26	0.0777	1853	163.7	-27.9	1.42	55.4	762	6351	36.3	348	1.45
274	0	0.09	84.25	0.0742	1846	162.8	-27.5	1.03	87.8	834	5414	35	498	1.32
275	1	0.36	84.24	0.0767	1853	163	-27.5	1.4	54.6	762	6432	35.7	357	1.43
276	0	0.05	84.23	0.0732	1846	162.8	-27.5	1.01	87.1	832	5414	35	498	1.32
277	0	0.20	84.21	0.077	1845	162.9	-27.5	1.09	89.5	840	5414	35	498	1.32
278	1	0.02	84.20	0.0725	1854	157.5	-32.6	0.912	63	762	6678	29.3	429	1.55
279	0	0.21	84.19	0.0773	1845	162.9	-27.5	1.09	89.7	841	5414	35	498	1.32
280	0	0.34	84.18	0.0808	1844	163.1	-27.4	1.16	92	847	5414	35	498	1.32
281	0	0.01	84.17	0.0723	1846	162.7	-27.5	0.994	96.5	829	5414	35	498	1.32
282	0	0.01	84.15	0.0723	1846	162.7	-27.5	0.994	96.5	829	5414	35	498	1.32
283	1	0.35	84.14	0.0758	1854	161.4	-29.4	1.32	58.9	763	6408	33.5	372	1.49
284	1	0.43	84.13	0.0789	1850	165.9	-25.9	1.6	60.1	763	6499	38.6	391	1.39
285	1	0.43	84.12	0.0785	1852	162.9	-28	1.44	60	763	6512	35.2	385	1.45
286	1	0.05	84.11	0.0743	1854	159.9	-31.6	0.99	61.3	762	6331	31.7	392	1.53
287	1	0.38	84.10	0.0781	1854	163.1	-27.7	1.44	56.1	763	6218	35.6	341	1.44
288	1	0.25	84.08	0.0788	1852	159.9	-29.2	1.25	63.7	763	6282	31.6	383	1.48
289	1	0.11	84.07	0.0721	1854	156.9	-32.2	1.07	61.4	762	6622	28.4	410	1.55
290	1	0.14	84.06	0.0753	1854	157.4	-30.7	1.1	62.1	762	6423	28.9	394	1.53
291	1	0.39	84.05	0.0772	1854	163	-28.8	1.34	55.7	762	6269	35.5	343	1.47
292	1	0.07	84.04	0.074	1854	158.1	-31.5	1.07	64.2	763	6543	29.6	420	1.54
293	1	0.19	84.02	0.0767	1852	157.4	-31	1.12	61.7	762	6395	28.9	384	1.52

Test no.	Controller	Inputs		Results							Feed materials consumed			
	0 = manual 1 = MPC	% C in scrap (Random)	DRI: % metallization	%C	Tapping Temp.	Steel mass	Relative Pressure	CO Emission	Avg Foam Depth	Max off gas temp	Oxygen (kg)	DRI (ton)	Graphite (kg)	Off-gas fan power (MW)
294	1	0.44	84.01	0.0785	1851	168.1	-25.5	1.6	55.3	763	6489	41.6	366	1.38
295	1	0.03	84.00	0.0746	1853	157.6	-32.2	0.99	63.2	762	6410	29.1	405	1.54
296	0	0.31	83.99	0.08	1845	163	-27.4	1.14	91.4	846	5414	35	498	1.32
297	0	0.29	83.98	0.0794	1845	163	-27.4	1.13	91.1	845	5414	35	498	1.32
298	1	0.39	83.96	0.0775	1852	162.3	-28.4	1.37	56.7	762	6430	34.9	362	1.46
299	0	0.27	83.95	0.0789	1846	163	-27.4	1.12	90.7	844	5414	35	498	1.32
300	0	0.43	83.94	0.0834	1845	163.1	-27.4	1.2	93.6	850	5414	35	498	1.32
301	1	0.28	83.93	0.077	1851	162.7	-30.1	1.17	59.2	762	6489	35.1	389	1.5
302	0	0.29	83.92	0.0794	1846	163	-27.4	1.13	91.1	845	5414	35	498	1.32
303	1	0.14	83.90	0.0742	1853	158.1	-31.6	1.07	63.2	762	6579	29.9	412	1.53
304	0	0.16	83.89	0.076	1846	162.8	-27.5	1.07	88.9	838	5414	35	498	1.32
305	1	0.20	83.88	0.0764	1853	160	-30.7	1.13	60.4	762	6304	31.9	376	1.51
306	0	0.26	83.87	0.0786	1846	162.9	-27.4	1.12	90.6	843	5414	35	498	1.32
307	0	0.30	83.86	0.0797	1846	162.9	-27.4	1.14	91.3	845	5414	35	498	1.32
308	0	0.11	83.85	0.0747	1847	162.7	-27.5	1.04	88.1	835	5414	35	498	1.32
309	1	0.06	83.83	0.0741	1853	156.9	-32.3	1	62.9	761	6493	28.4	409	1.54
310	0	0.26	83.82	0.0786	1846	162.9	-27.4	1.12	90.6	843	5414	35	498	1.32
311	1	0.37	83.81	0.0782	1852	160.7	-29.4	1.28	56.4	762	6422	32.6	381	1.46
312	1	0.14	83.80	0.0756	1854	158.9	-30.9	1.12	60.7	762	6353	30.7	383	1.52
313	0	0.03	83.79	0.0728	1847	162.6	-27.5	1	86.9	831	5414	35	498	1.32
314	0	0.20	83.77	0.077	1846	162.8	-27.5	1.09	89.6	840	5414	35	498	1.32
315	0	0.21	83.76	0.0773	1846	162.8	-27.5	1.09	89.7	841	5414	35	498	1.32
316	0	0.36	83.75	0.0814	1846	163	-27.4	1.17	92.3	848	5414	35	498	1.32
317	1	0.48	83.74	0.0784	1852	162.2	-27.1	1.59	59.8	762	6347	34.4	363	1.43
318	0	0.11	83.73	0.0747	1847	162.7	-27.5	1.04	88.1	835	5414	35	498	1.32
319	1	0.46	83.71	0.0784	1852	164	-27.2	1.53	59.3	762	6344	36.5	367	1.43
320	0	0.01	83.70	0.0723	1848	162.5	-27.5	0.994	86.6	829	5414	35	498	1.32
321	0	0.38	83.69	0.082	1846	163	-27.4	1.18	92.7	848	5414	35	498	1.32
322	0	0.24	83.68	0.0781	1847	162.8	-27.4	1.11	90.3	842	5414	35	498	1.32
323	1	0.34	83.67	0.0773	1850	162.9	-28.33	1.33	58.1	762	6442	35.4	377	1.46
324	1	0.46	83.65	0.0769	1853	162.9	-27.9	1.47	57	763	6550	35.6	373	1.44
325	1	0.42	83.64	0.0789	1852	164.2	-26.4	1.56	58	764	6405	37.1	368	1.4
326	0	0.07	83.63	0.0737	1848	162.6	-27.5	1.02	87.5	833	5414	35	498	1.32



Test no.	Controller	Inputs			Results							Feed materials consumed			
	0 = manual	% C in scrap	DRI: %	%C	Tapping	Steel	Relative	CO	Avg Foam	Max off	Oxygen	DRI	Graphite	Off-gas fan	
	1 = MPC	(Random)	metallization		Temp.	mass	Pressure	Emission	Depth	gas temp	(kg)	(ton)	(kg)	power (MW)	
327	1	0.15	83.62	0.0778	1852	158.6	-31.9	1.03	65.2	762	6359	30.2	400	1.54	
328	0	0.19	83.61	0.0767	1847	162.7	-27.5	1.08	89.4	840	5414	35	498	1.32	
329	1	0.04	83.60	0.0756	1853	157.5	-31.9	1.02	66.7	762	6415	28.8	418	1.54	
330	1	0.12	83.58	0.0743	1853	158	-31.7	1.06	64.8	762	6569	29.5	421	1.54	
331	1	0.33	83.57	0.0776	1852	165.5	-29.4	1.19	56.8	762	6382	38.5	371	1.47	
332	0	0.19	83.56	0.0767	1847	162.7	-27.5	1.08	89.4	840	5414	35	498	1.32	
333	1	0.45	83.55	0.0781	1851	165.7	-27.2	1.45	57.6	762	6657	39	389	1.42	
334	0	0.34	83.54	0.0808	1846	162.9	-27.4	1.16	92	847	5414	35	498	1.32	
335	0	0.47	83.52	0.0846	1846	163	-27.3	1.22	94.3	852	5414	35	498	1.32	
336	0	0.42	83.51	0.0831	1846	163	-27.4	1.2	93.4	850	5414	35	498	1.32	
337	0	0.09	83.50	0.0742	1848	162.6	-27.5	1.03	87.8	834	5414	35	498	1.32	
338	1	0.26	83.49	0.0789	1851	160.4	-28.9	1.28	62.5	762	6292	32.3	380	1.47	
339	1	0.42	83.48	0.0773	1852	162.9	-29.1	1.36	59.1	762	6458	35.4	377	1.48	
340	1	0.04	83.46	0.0745	1855	157.5	-32.8	0.958	62.6	762	6335	29.2	392	1.56	
341	0	0.48	83.45	0.0849	1846	163	-27.3	1.23	94.5	852	5414	35	498	1.32	
342	1	0.35	83.44	0.079	1852	160.7	-29.4	1.3	63.3	762	6421	32.7	389	1.49	
343	0	0.36	83.43	0.0814	1847	162.9	-27.4	1.17	92.4	848	5414	35	498	1.32	
344	0	0.02	83.42	0.0725	1849	162.5	-27.5	0.999	86.7	830	5414	35	498	1.32	
345	1	0.47	83.40	0.0782	1850	165.5	-26.2	1.58	56	762	6436	38.7	362	1.39	
346	0	0.12	83.39	0.075	1848	162.6	-27.5	1.05	88.3	836	5414	35	498	1.32	
347	1	0.15	83.38	0.0767	1853	157.4	-30.9	1.13	67.2	762	6553	28.9	425	1.53	
348	0	0.02	83.37	0.0725	1849	162.4	-27.5	0.999	86.7	830	5414	35	498	1.32	
349	0	0.05	83.36	0.0732	1849	162.5	-27.5	1.01	87.2	832	5414	35	498	1.32	
350	1	0.25	83.35	0.0775	1852	159.5	-31.1	1.19	61.4	761	6397	31.5	386	1.49	
351	0	0.03	83.33	0.0728	1849	162.4	-27.5	1	86.9	831	5414	35	498	1.32	
352	1	0.13	83.32	0.0753	1853	158	-30.5	1.14	63.9	762	6453	29.8	406	1.52	
353	1	0.48	83.31	0.0784	1851	164.3	-26.7	1.56	57.6	763	6465	37.3	367	1.42	
354	0	0.44	83.30	0.0837	1847	162.9	-27.3	1.21	93.8	851	5414	35	498	1.32	
355	0	0.14	83.29	0.0755	1848	162.6	-27.5	1.06	88.6	837	5414	35	498	1.32	
356	1	0.21	83.27	0.0772	1852	160.7	-29.8	1.19	62.4	762	6337	32.8	389	1.5	
357	1	0.44	83.26	0.0766	1852	164.7	-28.1	1.39	55.7	762	6540	37.9	370	1.44	
358	1	0.15	83.25	0.0781	1853	159.4	-31.6	1.02	63.3	761	6301	31.4	389	1.53	
359	0	0.31	83.24	0.08	1848	162.7	-27.4	1.14	91.5	846	5414	35	498	1.32	

Test no.	Controller	Inputs			Results						Feed materials consumed			
	0 = manual 1 = MPC	% C in scrap (Random)	DRI: % metallization	%C	Tapping Temp.	Steel mass	Relative Pressure	CO Emission	Avg Foam Depth	Max off gas temp	Oxygen (kg)	DRI (ton)	Graphite (kg)	Off-gas fan power (MW)
360	0	0.44	83.23	0.0837	1847	162.9	-27.3	1.21	93.8	851	5414	35	498	1.32
361	1	0.43	83.21	0.0777	1852	164.6	-26.5	1.56	55.5	763	6427	37.8	360	1.41
362	0	0.43	83.20	0.0834	1847	162.9	-27.4	1.2	93.6	850	5414	35	498	1.32
363	1	0.48	83.19	0.0796	1851	163.9	-26.7	1.57	60.9	762	6403	36.6	378	1.41
364	1	0.46	83.18	0.0811	1850	166.5	-25	1.72	61	763	6241	39.5	369	1.37
365	0	0.05	83.17	0.0732	1849	162.4	-27.5	1.01	87.2	832	5414	35	498	1.32
366	1	0.37	83.15	0.0785	1853	161.6	-29.1	1.32	60.6	762	6332	33.9	371	1.48
367	0	0.34	83.14	0.0808	1848	162.7	-27.4	1.16	92	847	5414	35	498	1.32
368	0	0.06	83.13	0.0735	1849	162.4	-27.5	1.02	87.4	833	5414	35	498	1.32
369	1	0.20	83.12	0.078	1853	157.7	-30.9	1.12	64.7	762	6383	29.5	395	1.52
370	0	0.03	83.11	0.0728	1849	162.4	-27.5	1	86.9	831	5414	35	498	1.32
371	1	0.07	83.10	0.0755	1853	159.7	-31.6	1.01	65.3	762	6318	31.6	405	1.54
372	1	0.31	83.08	0.0769	1853	161.5	-29.7	1.24	57.7	761	6318	34.1	361	1.49
373	0	0.49	83.07	0.0852	1847	162.9	-27.3	1.23	94.7	853	5414	35	498	1.32
374	1	0.11	83.06	0.0756	1853	158.1	-31.7	1.09	69.3	762	6548	29.6	437	1.54
375	1	0.24	83.05	0.0757	1853	157.4	-30.9	1.15	63.3	761	6651	29.4	411	1.52
376	1	0.35	83.04	0.0774	1853	163.1	-29.3	1.27	57.4	762	6349	35.9	363	1.48
377	1	0.18	83.02	0.0788	1852	158.1	-30.5	1.13	66.2	762	6333	29.8	399	1.52
378	1	0.39	83.01	0.0786	1851	160.8	-27.3	1.48	58.4	762	6335	33.3	360	1.43
379	0	0.35	83.00	0.0811	1848	162.7	-27.4	1.16	92.2	847	5414	35	498	1.32
380	1	0.36	82.99	0.0782	1851	163.6	-27.9	1.37	57.9	762	6335	36.4	367	1.44
381	1	0.06	82.98	0.0738	1854	156.5	-31.9	1.04	63.6	762	6615	28.4	419	1.54
382	1	0.16	82.96	0.0749	1852	157	-32.2	1.03	63.5	762	6468	28.8	402	1.54
383	1	0.22	82.95	0.0754	1853	159.2	-31.1	1.13	59.9	761	6499	31.4	389	1.52
384	0	0.09	82.94	0.0742	1850	162.4	-27.5	1.03	87.8	834	5414	35	498	1.32
385	0	0.26	82.93	0.0786	1849	162.6	-27.4	1.12	90.64	843	5414	35	498	1.32
386	1	0.06	82.92	0.0735	1855	156.9	-32.4	0.98	64.8	762	6598	28.8	425	1.55
387	0	0.37	82.90	0.0817	1848	162.7	-27.4	1.17	92.6	848	5414	35	498	1.32
388	0	0.16	82.89	0.076	1849	162.4	-27.5	1.07	89	838	5414	35	498	1.32
389	0	0.49	82.88	0.0852	1848	162.8	-27.3	1.23	94.7	853	5414	35	498	1.32
390	0	0.06	82.87	0.0735	1850	162.3	-27.5	1.02	87.4	833	5414	35	498	1.32
391	1	0.07	82.86	0.0739	1854	155.9	-31.4	1.12	66.1	761	6602	27.4	429	1.54
392	0	0.03	82.85	0.0728	1850	162.3	-27.5	1	86.9	831	5414	35	498	1.32



Test no.	Controller	Inputs		Results							Feed materials consumed			
	0 = manual 1 = MPC	% C in scrap (Random)	DRI: % metallization	%C	Tapping Temp.	Steel mass	Relative Pressure	CO Emission	Avg Foam Depth	Max off gas temp	Oxygen (kg)	DRI (ton)	Graphite (kg)	Off-gas fan power (MW)
393	1	0.47	82.83	0.08	1852	166.5	-26.3	1.59	57.1	762	6170	39.7	346	1.4
394	1	0.23	82.82	0.077	1851	161.3	-31	1.1	61	762	6479	33.8	397	1.52
395	1	0.14	82.81	0.0758	1855	158.8	-30.2	1.18	64.7	762	6405	30.7	405	1.52
396	1	0.43	82.80	0.0783	1851	164	-26.9	1.52	56.7	763	6355	37.1	359	1.42
397	1	0.08	82.79	0.0746	1855	157.5	-31.4	1.08	63.9	762	6482	29.4	411	1.54
398	0	0.00	82.77	0.072	1851	162.2	-27.5	0.99	86.4	829	5414	35	498	1.32
399	0	0.38	82.76	0.0819	1849	162.7	-27.4	1.18	92.8	849	5414	35	498	1.32
400	1	0.34	82.75	0.0772	1851	161.5	-30.4	1.17	59.2	761	6536	34.4	384	1.5
401	1	0.44	82.74	0.08	1850	165.7	-26.2	1.58	61.6	763	6396	38.8	386	1.4
402	0	0.50	82.73	0.0855	1848	162.8	-27.3	1.24	94.9	853	5414	35	498	1.32
403	1	0.43	82.71	0.0788	1851	163.1	-28.4	1.39	57.6	763	6311	36	355	1.45
404	1	0.41	82.70	0.0777	1852	163	-27.5	1.45	55.6	763	6342	36.1	350	1.43
405	1	0.11	82.69	0.0762	1854	157.6	-31	1.1	65.9	763	6345	29.3	404	1.53
406	0	0.20	82.68	0.077	1850	162.4	-27.5	1.09	89.6	840	5414	35	498	1.32
407	0	0.40	82.67	0.0825	1849	162.6	-27.4	1.19	93.1	849	5414	35	498	1.32
408	0	0.26	82.65	0.0786	1850	162.5	-27.4	1.12	90.7	843	5414	35	498	1.32
409	0	0.31	82.64	0.08	1849	162.5	-27.4	1.14	91.5	846	5414	35	498	1.32
410	1	0.12	82.63	0.0769	1852	159	-31.6	1.03	62.3	762	6322	31.2	389	1.53
411	1	0.30	82.62	0.0767	1852	161.9	-30.5	1.13	60.1	762	6549	34.7	397	1.5
412	1	0.20	82.61	0.0769	1855	159	-30.7	1.16	61.5	762	6275	31.2	376	1.51
413	1	0.23	82.60	0.0771	1853	161.4	-27.8	1.33	58.9	763	6262	34	369	1.46
414	1	0.16	82.58	0.0762	1854	158.3	-31.7	1.03	64.2	761	6451	30.5	405	1.54
415	1	0.49	82.57	0.0793	1850	165.1	-25.8	1.66	60.7	765	6603	38.5	398	1.39
416	1	0.08	82.56	0.0758	1853	156.9	-31.8	1.01	63.2	762	6440	28.9	402	1.54
417	1	0.27	82.55	0.0774	1851	161.8	-29.6	1.22	60.5	762	6339	34.4	380	1.49
418	1	0.23	82.54	0.0798	1851	158.8	-30.5	1.15	65.4	762	6238	30.8	384	1.51
419	0	0.10	82.52	0.0744	1851	162.2	-27.5	1.04	88	835	5414	35	498	1.32
420	0	0.50	82.51	0.0855	1849	162.7	-27.3	1.24	94.9	853	5414	35	498	1.32