

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
1	MicroBoone Phase I Control System Instrumentation Check List												10/30/2013		
2													M.Sarychev		
3	S7 I/O assignment				Tag #	Service Description	Range or Setpoint	WIRED	S7	CAL	IFIX	OPER	NOTES	LOC	
4	RAIL	Slot #	Ch #	Type											
5	10	4	0	4-20mA(in)	DPT615	Stairwell 3 pressure	0-2 "H2O	1	1	1	1	1	CMORE	P	
6			1	4-20mA(in)	DPT616	Stairwell 2 pressure	0-2 "H2O	1	1	1	1	1	CMORE	P	
7			2	4-20mA(in)	AT630	ODH	0-25 %O2	1	1	1	1	1	CMORE	ODH	
8			3	4-20mA(in)	AT631	ODH	0-25 %O2	1	1	1	1	1	CMORE	ODH	
9			4	4-20mA(in)	AT632	ODH	0-25 %O2	1	1	1	1	1	CMORE	ODH	
10			5	4-20mA(in)	AT633	ODH	0-25 %O2	1	1	1	1	1	CMORE	ODH	
11	11	4	0	DI (24VDC)	KEYS_OUT	Key(s) removed from key tree		1	1			1	1	CMORE	ENTRY
12			1	DI (24VDC)	FS617	AHU-3 flow		1	1			1	1	CMORE	ENTRY
13			2	DI (24VDC)	FS618	AHU-2 flow		1	1			1	1	CMORE	ENTRY
14			3	DI (24VDC)	FS619	EF-1 ODH fan flow		1	1			1	1	CMORE	ODH
15			4	DI (24VDC)	ODH_ALARM_IN	Hardwired ODH alarm		1	1			1	1	CMORE	ODH
16			5	DI (24VDC)	ODH_TROUBLE_IN	Hardwired ODH trouble alarm		1	1			1	1	CMORE	ODH
17			6	DI (24VDC)	KEYS_OUT_2	Keys removed(redundant)		1	1			1	1	CMORE	ENTRY
18			7	DI (24VDC)	CRYO_OVERRIDE	Cryo mode override		1	1			1	1	CMORE	ENTRY
19			8	DI (24VDC)	FD_OVERRIDE	Fire department override		1	1			1	1	CMORE	ENTRY
20			9	DI (24VDC)	KEYS_DOOR	Keytree door status		1	1			1	1	CMORE	ENTRY
21	11	5	6	D0 (24VDC)	PV310F	LAr fill shut-off		1	1				1	PLC	
22			7	D0 (24VDC)	PV1058F	LAr buffer Dewar shut-off		1	1				1	PLC	
23			8	D0 (24VDC)	LAR_PUMP_1_F	LAR pump 1 run permit		1	1				1	P	
24			9	D0 (24VDC)	LAR_PUMP_2_F	LAR pump 2 run permit		1	1				1	P	
25	11	6	0	D0 (24VDC)	EF1	ODH fan control		1	1			1	1	CMORE	ODH
26			1	D0 (24VDC)	AHU_2	Stairwell 2 pressurization		1	1			1	1	CMORE	ENTRY
27			2	D0 (24VDC)	AHU_3	Stairwell 3 pressurization		1	1			1	1	CMORE	ENTRY
28			3	D0 (24VDC)	RELEASE_DOOR_2	Entry control								CMORE	ENTRY
29			4	D0 (24VDC)	RELEASE_DOOR_3	Entry control								CMORE	ENTRY
30			5	D0 (24VDC)	STAIRS_TROUBLE	Pressurization failure		1	1			1	1	CMORE	ENTRY
31			6	D0 (24VDC)	RELEASE_KEYTREE	Open keytree door		1	1			1	1	CMORE	ENTRY
32			7	D0 (24VDC)	STAIRS_OK	Stairs pressure OK		1	1			1	1	CMORE	ENTRY
33			8	D0 (24VDC)	PV440F	Purity monitor inlet		1	1			1	1		PLC
34	12	12	1	RTD	TE445	Copper seive V-14 temperature		1	1	1	1	1		P	
35			2	RTD	TE446	Copper seive V-14 temperature		1	1	1	1	1		P	
36			3	RTD	TE447	Copper seive V-14 temperature		1	1	1	1	1		P	

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
37			4	RTD	TE448	Copper seive V-14 temperature		1	1	1	1	1		P
38			5	RTD	TE449	Copper seive V-14 temperature		1	1	1	1	1		P
39			6	RTD	TE450	Copper seive V-14 temperature		1	1	1	1	1		P
40			7	RTD	TE451	Copper seive V-14 temperature		1	1	1	1	1		P
41			8	RTD	TE452	Copper seive V-14 temperature		1	1	1	1	1		P
42	12	13	1	RTD	TE545	Copper seive V-13 temperature		1	1	1	1	1		P
43			2	RTD	TE546	Copper seive V-13 temperature		1	1	1	1	1		P
44			3	RTD	TE547	Copper seive V-13 temperature		1	1	1	1	1		P
45			4	RTD	TE548	Copper seive V-13 temperature		1	1	1	1	1		P
46			5	RTD	TE549	Copper seive V-13 temperature		1	1	1	1	1		P
47			6	RTD	TE550	Copper seive V-13 temperature		1	1	1	1	1		P
48			7	RTD	TE551	Copper seive V-13 temperature		1	1	1	1	1		P
49			8	RTD	TE552	Copper seive V-13 temperature		1	1	1	1	1		P
50	12	14	1	RTD	TE406	Mole seive V-8 temperature		1	1	1	1	1		P
51			2	RTD	TE407	Mole seive V-8 temperature		1	1	1	1	1		P
52			3	RTD	TE408	Mole seive V-8 temperature		1	1	1	1	1		P
53			4	RTD	TE409	Mole seive V-8 temperature		1	1	1	1	1		P
54			5	RTD	TE410	Mole seive V-8 temperature		1	1	1	1	1		P
55			6	RTD	TE411	Mole seive V-8 temperature		1	1	1	1	1		P
56			7	RTD	TE412	Mole seive V-8 temperature		1	1	1	1	1		P
57			8	RTD	TE413	Mole seive V-8 temperature		1	1	1	1	1		P
58	12	15	1	RTD	TE414	Mole seive V-8 temperature		1	1	1	1	1		P
59			2	RTD	TE506	Mole seive V-7 temperature		1	1	1	1	1		P
60			3	RTD	TE507	Mole seive V-7 temperature		1	1	1	1	1		P
61			4	RTD	TE508	Mole seive V-7 temperature		1	1	1	1	1		P
62			5	RTD	TE509	Mole seive V-7 temperature		1	1	1	1	1		P
63			6	RTD	TE510	Mole seive V-7 temperature		1	1	1	1	1		P
64			7	RTD	TE511	Mole seive V-7 temperature		1	1	1	1	1		P
65			8	RTD	TE512	Mole seive V-7 temperature		1	1	1	1	1		P
66	12	16	1	RTD	TE513	Mole seive V-7 temperature		1	1	1	1	1		P
67			2	RTD	TE514	Mole seive V-7 temperature	Bad rtd	1						P
68			3	RTD	TE696	Temperature after HTR1		1	1	1	1	1		P
69			4	RTD	TE1053	Buffer Dewar condenser		1	1	1	1	1		O
70	13	1	7	4-20mA(in)	PT312	LAr fill line	-14.7 - 50 psig	1	1	1	1	1		P
71			8	4-20mA(in)	PT318	LAR pumps (P1 and P2) discharge	0-250 psia	1	1	1	1	1		P
72	13	2	1	4-20mA(in)	PT368	P1 pump suction	0-50 psia	1	1	1	1	1		P
73			2	4-20mA(in)	PT378	P2 pump suction	0-50 psia	1	1	1	1	1		P
74			3	4-20mA(in)	PT427	Skid 1 (V8 and V14) outlet	0-250 psia	1	1	1	1	1		P
75			4	4-20mA(in)	PT433	Purity monitor	0-250 psia	1	1	1	1	1		G
76			5	4-20mA(in)	PT481	High pressure actuators	0-250 psig	1	1	1	1	1		G
77			6	4-20mA(in)	PT486	Low pressure actuators	0-50 psig	1	1	1	1	1		G
78			7	4-20mA(in)	PT527	Skid 2 (V7 and V13) outlet	0-250 psia	1	1	1	1	1		G

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
79			8	4-20mA(in)	PT658	Regeneration - Ar supply	0-100 psig	1	1	1	1	1		G
80	13	3	1	4-20mA(in)	PT668	Regeneration - Ar/H2 supply	0-100 psig	1	1	1	1	1		G
81			2	4-20mA(in)	PT687	Ar Dewar	0-300 psig	1	1	1	1	1		O
82			7	4-20mA(in)	PT1067	Test Ar Dewar	0-50 psia							G
83			8	4-20mA(in)	PT973	N2 Dewar	0-100 psig	1	1	1	1	1		O
84	13	4	1	4-20mA(in)	PT1041	Ar buffer Dewar	-14.7 - 50 psig	1	1	1	1	1		O
85			2	4-20mA(in)	PT1052	Ar buffer Dewar - condenser outlet	0-100 psig	1	1	1	1	1		O
86			3	4-20mA(in)	PT666	Ar/H2 trailers pressure	0 - 3000 psig	1	1	1	1	1		O
87			5	4-20mA(in)	LT1064	Ar Buffer Dewar level	0-138.5 "H2O	1	1	1	1	1		O
88			6	4-20mA(in)	DP_ATM_1	Atmospheric Dew Point	-20 - +60 C	1	1	1	1	1		PIT-TEM
89			7	4-20mA(in)	TE_ATM_1	Atmospheric Temperature	-20 - +60 C	1	1	1	1	1		PIT-TEM
90	13	5	2	4-20mA(in)	LT455	Purity monitor level	0-23"	1	1	1	1	1		G
91			3	4-20mA(in)	P1_SPEED_IN	Main circulation pump P1 readback	0-5700	1	1	1	1	1		P
92			4	4-20mA(in)	P2_SPEED_IN	Main circulation pump P2 readback	0-5700	1	1	1	1	1		P
93			5	4-20mA(in)	LT1069	Test Ar Dewar	TBD							G
94			8	4-20mA(in)	FT614	ODH EF1 flow	0-2000 fpm	1	1	1	1	1		P
95	13	6	1	4-20mA(in)	FT366	Pump P1 venturi flow transmitter	0-100" H2O	1	1	1	1	1		P
96			2	4-20mA(in)	FT376	Pump P2 venturi flow transmitter	0-100" H2O	1	1	1	1	1		P
97			6	4-20mA(in)	LT686	Regeneration - Ar Dewar level	0-200"H2O	1	1	1	1	1		O
98			7	4-20mA(in)	LT971	N2 Dewar level	0-100"H2O	1	1	1	1	1		O
99			8	4-20mA(in)	LT1043	Ar Buffer Dewar level	0-250"H2O	1	1	1	1	1		O
100	13	9	1	0-10VDC(in)	PT364	Pump P1 vacuum jacket	10E-4 - 1000 Torr	1	1	1	1	1		P
101			2	0-10VDC(in)	PT374	Pump P2 vacuum jacket	10E-4 - 1000 Torr	1	1	1	1	1		P
102			3	0-10VDC(in)	PT405	RIGHT Mole seive V8 vacuum jacket	10E-4 - 1000 Torr	1	1	1	1	1		P
103			4	0-10VDC(in)	PT456	Purity monitor vacuum jacket	10E-4 - 1000 Torr	1	1	1	1	1		G
104			5	0-10VDC(in)	PT505	LEFT Mole seive V7 vacuum jacket	10E-4 - 1000 Torr	1	1	1	1	1		P
105			6	0-10VDC(in)	PT958	N2 Dewar vacuum jacket	10E-4 - 1000 Torr	1	1	1	1	1		G
106			7	0-10VDC(in)	PT1008	Ar buffer Dewar vacuum jacket	10E-4 - 1000 Torr	1	1	1	1	1		G
107			8	0-10VDC(in)	PT1076	Test Ar Dewar	10E-4 - 1000 Torr						former PT1036	G
108	13	12	7	4-20mA(Out)	FCV626	Ar Dewar-make-up or cooldown loop	0-100%	1	1	1	1	1		G
109	13	13	2	4-20mA(Out)	FCV935	N2 Dewar - N2 inlet to Ar Buffer condenser	0-100%	1	1	1	1	1		O
110			3	4-20mA(Out)	FCV1050	Ar Buffer Dewar - N2 outlet	0-100%	1	1	1	1	1		O
111			7	4-20mA(Out)	P1_SPEED_OUT	Main circulation pump P2 (V2) loop output	0-5700	1	1	1	1	1		P
112			8	4-20mA(Out)	P2_SPEED_OUT	Main circulation pump P1 (V3) loop output	0-5700	1	1	1	1	1		P
113	13	14	7	4-20mA(Out)	HTR1_OUT	Heater 1 loop output	0-100%	1	1	1	1	1		P
114			8	4-20mA(Out)	EF1_SPEED_CON	EF1 Speed Control	0-2127 RPM(0-7500 CFM)	1	1	1	1	1		EF1
115	13	16	1	0-10VDC(OUT)	FCV657	Ar flow to regeneration	0-278 SLPM	1	1	1	1	1		G
116			2	0-10VDC(OUT)	FCV667A	H2/Ar flow to regeneration	0-278 SLPM	1	1	1	1	1		G
117			3	0-10VDC(OUT)	FCV663	Ar flow to regeneration	0-278 SLPM	1	1	1	1	1		G
118	14	1	1	4-20mA(in)	AT606DP	Low sensitivity H2O	TBD Dewpoint	1	1	1	1	1		P
119			2	4-20mA(in)	AT606PPM	Low sensitivity H2O	TBD ppm	1	1	1	1	1		P
120			3	4-20mA(in)	AT607	Low sensitivity O2	0-5; 0-50ppm	1	1	1	1	1		P

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
121			4	4-20mA(in)	AT608	High sensitivity H2O	0-10000 ppb	1	1	1	1	1		P	
122			5	4-20mA(in)	AT609	High sensitivity O2	0-0.1;0-1;0-100 ppm	1	1	1	1	1		P	
123			6	4-20mA(in)	AT610	High sensitivity N2	0-100;0-500;0-5000 ppb	1	1	1	1	1		P	
124	14	2	1	-10...+10VDC(In)	EF1_SPEED	EF-1 RPM	0-2127 RPM(0-7500 CFM)	1	1	1	1	1		EF1	
125			3	-10...+10VDC(In)	FT667A_IN	Ar/H2 flow readback	0-278 SLPM	1	1	1	1	1		G	
126			4	-10...+10VDC(In)	FT663_IN	Ar flow to regeneration	0-278 SLPM	1	1	1	1	1		G	
127			5	-10...+10VDC(In)	FT657_IN	Ar flow readback	0-278 SLPM	1	1	1	1	1		G	
128	14	6	6	RELAY	PV310	LAr fill shut-off		1	1			1	1	G	
129			7	RELAY	PV1058	LAr buffer Dewar shut-off		1	1			1	1	G	
130			8	RELAY	PV440	Purity monitor inlet		1	1			1	1	G	
131	14	8	1	RELAY	LAR_PUMP_1_FORWARD	LAR pump 1 control		1	1			1	1	P	
132			2	RELAY	LAR_PUMP_2_FORWARD	LAR pump 2 control		1	1			1	1	P	
133	14	10	2	DI (24VDC)	PS303	LAr fill line/ PV310		1	1			1	1	G	
134			12	DI (24VDC)	HTR1_READY	Heater 1 limit		1	1			1	1	G	
135	14	11	1	DI (24VDC)	P1_TEMP_STAT	LAR pump 1 temperature switch status		1	1			1	1	P	
136			2	DI (24VDC)	P2_TEMP_STAT	LAR pump 2 temperature switch status		1	1			1	1	P	
137			3	DI (24VDC)	EF1_RUN_STAT	EF-1 Run Status	ON=RUN	1	1			1	1	EF1	
138			4	DI (24VDC)	AT607_R1	DF-310E range status		1	1			1	1	P	
139			5	DI (24VDC)	AT609_R1	DF-560 range status		1	1			1	1	P	
140			6	DI (24VDC)	AT609_R2	DF-560 range status		1	1			1	1	P	
141			7	DI (24VDC)	AT610_R1	LDETEC range status		1	1			1	1	P	
142			8	DI (24VDC)	AT610_R2	LDETEC range status		1	1			1	1	P	
143			9	DI (24VDC)	AT610_R3	LDETEC range status		1	1			1	1	P	
144	14	14	5	DO (24VDC)	PV438	Purity monitor vent		1	1			1	1	G	
145			7	DO (24VDC)	PV442	Purity monitor outlet		1	1			1	1	G	
146			8	DO (24VDC)	PV646	H2/Ar supply		1	1			1	1	G	
147			15	DO (24VDC)	HTR1_CON	Heater 1 Enable		1	1			1	1	P	
148			16	DO (24VDC)	PV1072	Ar Test Dewar Vent							ev217	G	
149	FIRUS ODH Trouble								1				1		
150	FIRUS ODH ALARM								1				1		
151	Fire Dept Keyswitch Bypass								1				1		
152	Fire Dept Box display 10/22awg cable								1				1		
153	ODH Head 1								1				1		
154	ODH Head 2								1				1		
155	ODH Head 3								1				1		
156	ODH Head 4								1				1		
157	ODH Siren/Lights								1				1		
158	Touch Screen Network								1	1	1		1	CMORE	
159	ODH to EF1								1				1		
160	Purifier TE699(termocouple) to Heater Interlock								1				1		
161	Purifier TE453(RTD) to Heater Interlock								1				1		
162	Purifier TE553(RTD) to Heater Interlock								1				1		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
163	152 138 97 133 151													
164	WIRED S7 CAL IFIX OPER													