			MI-62 LCW and Pond PLC					
			MI62-LCW-PLC					
ACNET Tag	PLC Adr	Format	Description	Type	Device	Slot	CNL/ADR	Range
								(4mA-20mA)
			MI-62 LCW Analog Inputs:					
	VX0	Integer			F4-16AD-1	1		
	V10000	Integer	MI-62 LCW Supply Pressure	4-20 mA	F4-16AD-1	1	1	0-400 psig
	V10001	Integer	MI-62 LCW Expansion Tank Air Pressure	4-20 mA	F4-16AD-1	1	2	0-400 psig
	V10002	Integer	MI-62 LCW Supply Temperature (heat exch. Outlet)(via Powers)	4-20 mA	F4-16AD-1	1	3	-40 - 160 F
	V10003	Integer	MI-62 LCW Return Temperature (heat exch. Inlet)	4-20 mA	F4-16AD-1	1	4	-40 - 160 F
	V10004	Integer	MI-62 LCW Supply Resistivity	4-20 mA	F4-16AD-1	1	5	0 - 18 Mohm
	V10005	Integer	MI-62 LCW Resistivity Out of the DI Bottles	4-20 mA	F4-16AD-1	1	6	0 - 18 Mohm
	V10006	Integer	(spare)	4-20 mA	F4-16AD-1	1	7	0 - 18 Mohm
	V10007	Integer	MI-62 LCW Expansion Tank Liquid Level	4-20 mA	F4-16AD-1	1	8	0-30 inches
	V10010	Integer	PV9 Pond Water Supply Pressure (after strainer)	4-20 mA	F4-16AD-1	1	9	0-400 psig
	V10011	Integer	MI-62 LCW Pump Suction Pressure (on LCW return side)	4-20 mA	F4-16AD-1	1	10	0-400 psig
	V10012	Integer	PV9 Pond Water Pump Suction Pressure (in pump vault)	4-20 mA	F4-16AD-1	1	11	0-30 psiA
	V10013	Integer	PV9 Pond Water Pump Discharge Pressure (before strainer)	4-20 mA	F4-16AD-1	1	12	0-300 psig
	V10014	Integer	PV9 Pond Water Supply Temperature (heat exch. Inlet)	4-20 mA	F4-16AD-1	1	13	-40 - 160 F
	V10015	Integer	PV9 Pond Water Return Temperature (heat exch. Outlet)	4-20 mA	F4-16AD-1	1	14	-40 - 160 F
	V10016	Integer	Three-way Valve Position	4-20 mA	F4-16AD-1	1	15	0 to 100 pct
	V10017	Integer	(spare)	4-20 mA	F4-16AD-1	1	16	
	VX20	Integer			F4-16AD-1	2		
	V10020	Integer	MI-62 LCW 1 Pump Current (Riley)	4-20 mA	F4-16AD-1	2	1	0-200A
	V10021	Integer	MI-62 LCW 2 Pump Current (from AC drive)	4-20 mA	F4-16AD-1	2	2	0-250A
	V10022	Integer	PV9 Pond A Pump Current (high speed winding)(Riley)	4-20 mA	F4-16AD-1	2	3	0-50A
	V10023	Integer	PV9 Pond A Pump Current (low speed winding)(Riley)	4-20 mA	F4-16AD-1	2	4	0-50A
	V10024	Integer	PV9 Pond B Pump Current (Riley)	4-20 mA	F4-16AD-1	2	5	0-30A
	V10025	Integer	LCW-1 Thermistor	4-20 mA	F4-16AD-1	2	6	
	V10026	Integer	LCW-2 Thermistor	4-20 mA	F4-16AD-1	2	7	
	V10027	Integer	(spare)	4-20 mA	F4-16AD-1	2	8	
	V10030	Integer	(spare)	4-20 mA	F4-16AD-1	2	9	
	V10031	Integer	(spare)	4-20 mA	F4-16AD-1	2	10	
	V10032	Integer	(spare)	4-20 mA	F4-16AD-1	2	11	
	V10033	Integer	(spare)	4-20 mA	F4-16AD-1	2	12	
	V10034	Integer	(spare)	4-20 mA	F4-16AD-1	2	13	
	V10035	Integer	(spare)	4-20 mA	F4-16AD-1	2	14	
	V10036	Integer	(spare)	4-20 mA	F4-16AD-1	2	15	

	V10037	Integer	Override switch	4-20 mA	F4-16AD-1	2	16	
			MI-62 Digital Outputs:					
	Y0	Bit	PV9 Pond A STOP	NC Relay	F4-08TRS-2	3	0(Form C)	
	Y1	Bit	PV9 Pond B STOP	NC Relay	F4-08TRS-2	3	1(Form C)	
	Y2	Bit	LCW 1 Pump STOP	NC Relay	F4-08TRS-2	3	2(Form C)	
	Y3	Bit	LCW 2 Pump STOP	NC Relay	F4-08TRS-2	3	3(Form C)	
	Y4	Bit	PV9 Pond A Pump START, Fast Mode	NO Relay	F4-08TRS-2	3	4(Form A)	
	Y5	Bit	PV9 Pond B Pump START	NO Relay	F4-08TRS-2	3	5(Form A)	
	Y6	Bit	LCW 1 Pump START	NO Relay	F4-08TRS-2	3	6(Form A)	
	Y7	Bit	LCW 2 Pump START	NO Relay	F4-08TRS-2	3	7(Form A)	
	Y10	Bit	LCW low temp override lamp	NO/NC Relay	F4-08TRS-2	4	0(Form C)	
	Y11	Bit	(spare)	NO Relay	F4-08TRS-2	4	1(Form C)	
	Y12	Bit	(spare)	NO Relay	F4-08TRS-2	4	2(Form C)	
	Y13	Bit	Magnet Power Supply Permit to MI60N	NO Relay	F4-08TRS-2	4	3(Form C)	
	Y14	Bit	PV9 Pond A Pump START, Slow Mode	NO Relay	F4-08TRS-2	4	4(Form A)	
	Y15	Bit	Magnet Power Supply Permit to MI62	NO Relay	F4-08TRS-2	4	5(Form A)	
	Y16	Bit	Beam Permit to Pernicious Panel	NO Relay	F4-08TRS-2	4	6(Form A)	
	Y17	Bit	Watchdog Kick	NO Relay	F4-08TRS-2	4	7(Form A)	
			MI-62 Inputs from ACNET:					
E:62WS10	B2241.0	Bit	LCW 1 Pump RUN/~STOP	Bit-Out				
E:62WS20	B2241.1	Bit	LCW 2 Pump RUN/~STOP	Bit-Out				
E:62PS10	B2241.2	Bit	PV9 Pond A Pump RUN/~STOP	Bit-Out				
E:62PS20	B2241.3	Bit	PV9 Pond B Pump RUN/~STOP	Bit-Out				
E:62WS90	B2241.4	Bit	LCW Expansion Tank Trip Reset	Bit-Out				
E:62PS30	B2241.5	Bit	PV9 Pond A High Speed	Bit-Out				
E:62PS90	B2241.6	Bit	PV9A Overcurrent Trip Reset	Bit-Out				
E:62PS91	B2241.7	Bit	PV9B Overcurrent Trip Reset	Bit-Out				
E:62WS97	B2241.8	Bit	LCW1 Overcurrent Trip Reset	Bit-Out				
E:62WS98	B2241.9	Bit	LCW1 Overtemp Trip Reset	Bit-Out				
E:62WS93	B2241.10	Bit	LCW2 Overcurrent Trip Reset	Bit-Out				
E:62WS94	B2241.11	Bit	LCW2 Overtemp Trip Reset	Bit-Out				
E:62WS95	B2241.12	Bit	LCW Supply Cold Trip Reset	Bit-Out				
E:62WS96	B2241.13	Bit	LCW Supply Hot Trip Reset	Bit-Out				
E:62PS92	B2241.14	Bit	PV9A Overtemp Trip Reset	Bit-Out				
E:62PS93	B2241.15	Bit	PV9B Overtemp Trip Reset	Bit-Out				
E:62WS99	B2242.0	Bit	LCW No Pond Motors Trip Reset	Bit-Out				

			MI-62 Outputs to ACNET:					
E:62WS01	B2001.0	Bit	LCW 1 Pump Run Status	Bit-In		2	A0	
E:62WS02	B2001.1	Bit	LCW 2 Pump Run Status	Bit-In		2	A1	
E:62PS01	B2001.2	Bit	PV9 Pond A Pump Run Status	Bit-In		2	A2	
E:62PS02	B2001.3	Bit	PV9 Pond B Pump Run Status	Bit-In		2	A4	
E:62PS03	B2001.4	Bit	PV9 Pond A Pump High/~Low speed status	Bit-In		2	A3	
E:62PA01	B2002.0	Bit	ALARM Pond Water Supply Pressure Low	Bit-In		1	12	
E:62PA02	B2002.1	Bit	ALARM Pond Water Strainer Differential Pressure High	Bit-In				
E:62WA01	B2002.2	Bit	ALARM LCW Expansion Tank Level High	Bit-In		1	8	
E:62PA05	B2002.3	Bit	ALARM Pond Pump Differential Pressure Low	Bit-In				
E:62WA05	B2002.4	Bit	ALARM LCW Expansion Tank Air Pressure Low	Bit-In		1	2	
E:62WA06	B2002.5	Bit	ALARM LCW Supply Temperature High	Bit-In		1	3	
E:62WA07	B2002.6	Bit	ALARM LCW Supply Temperature Low	Bit-In		1	3	
E:62WA08	B2002.7	Bit	ALARM LCW Supply Resistivity Low	Bit-In		1	5	
E:62WA09	B2002.8	Bit	ALARM LCW DI Bottle Resistivity Low	Bit-In		1	6	
	B2002.9	Bit	(not used)	Bit-In		1	7	
	B2002.10	Bit	(not used)	Bit-In				
	B2002.11	Bit	(not used)	Bit-In				
E:62PA04	B2002.12	Bit	ALARM Pond Discharge Pressure (before strainer) Low	Bit-In				
E:62WA02	B2002.13	Bit	ALARM LCW Expansion Tank Level Low	Bit-In		1	8	
E:62WA03	B2002.14	Bit	ALARM LCW Expansion Tank Level Low Low	Bit-In		1	8	
	B2002.15	Bit	(not used)	Bit-In		1	8	
E:62WE01	B2003.0	Bit	Beam Permit	Bit-In		3	7	
E:62WE02	B2003.1	Bit	Magnet Power Supply Permit	Bit-In		3	6	
E:62WA12	B2003.2	Bit	PLC Warning	Bit-In				
E:62WA13	B2003.3	Bit	PLC Critical Error	Bit-In				
E:62WA10	B2004.0	Bit	TRIP LCW1 Motor Overcurrent	Bit-In				
E:62WA11	B2004.1	Bit	TRIP LCW1 Motor Hot	Bit-In				
E:62WA18	B2004.2	Bit	TRIP LCW2 Motor Overcurrent	Bit-In				
E:62WA15	B2004.3	Bit	TRIP LCW2 Motor Hot	Bit-In				
E:62WA16	B2004.4	Bit	TRIP LCW Supply Temp Hot	Bit-In				
E:62WA17	B2004.5	Bit	TRIP LCW Supply Temp Cold	Bit-In				
E:62WA04	B2004.6	Bit	TRIP LCW Expansion Tank Level REALLY Low	Bit-In				
E:62PA03	B2004.7	Bit	TRIP PV9A Motor Hot	Bit-In				
E:62PA06	B2004.8	Bit	TRIP PV9B Motor Hot	Bit-In				
E:62PA07	B2004.9	Bit	TRIP PV9A Overcurrent	Bit-In				
E:62PA08	B2004.10	Bit	TRIP PV9B Overcurrent	Bit-In				

E:62WA19	B2004.11	Bit	TRIP LCW No Pond Motors Running	Bit-In				
E:62WP01	V2143:2	IEEE	MI-62 LCW Supply Pressure	Analog-In		1	1	0-400 psig
E:62WP02	V2145:4	IEEE	MI-62 LCW Expansion Tank Air Pressure	Analog-In		1	2	0-400 psig
E:62WT01	V2147:6	IEEE	MI-62 LCW Supply Temperature (heat exch. Outlet)(via Powers)	Analog-In		1	3	-40-160 F
E:62WT02	V2151:0	IEEE	MI-62 LCW Return Temperature (heat exch. Inlet)	Analog-In		1	4	-40-160F
E:62WR01	V2153:2	IEEE	MI-62 LCW Supply Resistivity	Analog-In		1	5	0-18M
E:62WR02	V2155:4	IEEE	MI-62 LCW Resistivity Out of the DI Bottles	Analog-In		1	6	0-18M
E:62WA14	V2156	Word	PLC Heartbeat Counter	Analog-In				
	V2157	Word						
E:62WL01	V2161:0	IEEE	MI-62 LCW Expansion Tank Liquid Level	Analog-In		1	8	0-30 in
E:62PP01	V2163:2	IEEE	PV9 Pond Supply Pressure (after strainer)	Analog-In		1	9	0-400 psig
E:62PP02	V2165:4	IEEE	PV9 Pond Water Strainer Differential Pressure (calculated)	Analog-In				
E:62PP03	V2167:6	IEEE	PV9 Pond Water Pump Suction Pressure (in vault)	Analog-In		1	11	0-30 psiA
E:62PP04	V2171:0	IEEE	PV9 Pond Supply Pressure (before strainer)	Analog-In		1	12	0-400 psig
E:62PT01	V2173:2	IEEE	PV9 Pond Water Supply Temperature (heat exch. Inlet)	Analog-In		1	13	-40-160F
E:62PT02	V2175:4	IEEE	PV9 Pond Water Return Temperature (heat exch. Outlet)	Analog-In		1	14	-40-160F
E:62PP05	V2177:6	IEEE	PV9 Pond Pump Differential Pressure (calculated; PP04-PP03)	Analog-In				
E:62WI01	V2201:0	IEEE	MI-62 LCW-1 Motor Current	Analog-In				
E:62WI02	V2203:2	IEEE	MI-62 LCW-2 Motor Current	Analog-In				
E:62PI01	V2205:4	IEEE	PV9 Pond A Motor Current (high speed winding)	Analog-In				
E:62PI03	V2207:6	IEEE	PV9 Pond A Motor Current (low speed winding)	Analog-In				
E:62PI02	V2211:0	IEEE	PV9 Pond B Motor Current	Analog-In				
E:62WP03	V2213:2	IEEE	MI-62 LCW Pump Suction Pressure (on LCW return side)	Analog-In				
E:62WW01	V2215:4	IEEE	MI-62 Mixing Valve Position	Analog-In				
E:62WS91	V2217:6	IEEE	LCW-1 Thermistor Current (indicative of motor temp)	Analog-In				
E:62WS92	V2221:0	IEEE	LCW-2 Thermistor Current (indicative of motor temp)	Analog-In				
			CMEM Usage					
	C0	Bit	All PV9A trips (Or'ed)					
	C1	Bit	All PV9B trips (Or'ed)					
	C2	Bit						
	C3	Bit						
	C4	Bit						
	C5	Bit						
	C6	Bit	PV9A is running in high speed mode					
	C7	Bit	PV9A is running in low speed mode					
	C10	Bit	Text Display F1 radio button (motors)					
	C11	Bit	Text Display F2 radio button (sensors)					

	C12	Bit	Text Display F3 radio button (alarms)					
	C13	Bit	Text Display F4 radio button (trips)					
	C14	Bit	Text Display block call MOTOR STATUS					
	C15	Bit	Text Display block call SENSOR STATUS					
	C16	Bit	Text Display block call ALARMS STATUS					
	C17	Bit	Text Display block call TRIPS DISPLAY					
	C20	Bit	Up-Arrow closed detect					
	C21	Bit	Dwn-Arrow closed detect					
	C22	Bit	Up-Arrow PD					
	C23	Bit	Dwn-Arrow PD					
	C24	Bit	ALU Zero Latch					
	C25	Bit	ALU Neg Latch					
	C26	Bit	F5 PD					
	C27	Bit	F5 closed detect					
	C30	Bit	All LCW-1 Trips (Or'ed)					
	C31	Bit	All LCW-2 Trips (Or'ed)					
	C32	Bit	LCW Low Temp Override					
			VMEM Usage					
	V10040	IEEE	psig scale factor					
	V10042	IEEE	temperature scale factor					
	V10044	IEEE	resistivity scale factor					
	V10046	IEEE	MI62 expansion tank level sensor scale factor					
	V10050	IEEE	PV9 vault absolute pressure sensor scale factor					
	V10052	IEEE	PV9 vault absolute pressure sensor offset					
	V10054	IEEE	50A Riley current sensor scale factor					
	V10056	IEEE	300A Riley current sensor scale factor					
	V10060	IEEE	Resistivity alarm limit					
	V10062	IEEE	Temperature alarm limit low					
	V10064	IEEE	Temperature alarm limit high					
	V10066	IEEE	Tank level alarm limit low					
	V10070	IEEE	Tank level alarm limit high					
	V10072	IEEE	Discharge pressure (before strainer) alarm limit low					
	V10074	Word	Motor Start-Stop Delay					
	V10075	Word						
	V10076	IEEE	PV9 supply pressure (after strainer) alarm limit					
	V10100	IEEE	PV9 strainer differential pressure alarm limit					
	V10102	IEEE	LCW expansion tank air pressure low alarm limit					
	V10104	IEEE	LCW Shutdown temp high					

	V10106	IEEE	LCW Shutdown temp low					
	V10110	Word	General Alarm Integration Time					
	V10111	Word	LCW motor shutdown integration time					
	V10112	IEEE	Tank level alarm limit low low					
	V10114	IEEE	Tank level alarm limit REALLY low					
	V10116	IEEE	LCW motor minimum running current					
	V10120	IEEE	LCW motor maximum running current					
	V10122	IEEE	PV9 motor minimum running current					
	V10124	IEEE	PV9 motor maximum running current, low speed mode					
	V10126	IEEE	PV9 motor maximum running current, high speed mode					
	V10130	IEEE	PV9 pond pump differential pressure low alarm limit					
	V10140-V10177	Word	Alarm Message look-up table					
	V10200-V10221	Word	Something steps on these words, makes them all FFFF					
	V10222	IEEE	Temp Transducer Offset					
	V10224	IEEE	Upper trip point for LCW motor overtemp					
	V10226	IEEE	Valve position conversion factor					
	V10230	IEEE	Loop current conversion factor					
	V10232	IEEE	Loop current offset					
	V10234	IEEE	Lower trip point for LCW motor overtemp					
	V10236	IEEE	Current trip point for LCW1 motor overtemp					
	V10240	IEEE	Current trip point for LCW2 motor overtemp					
	V10242	DWORD	Temporary storage for alarm display scan					
	V10244	WORD	Alarm scan bit counter					
	V10245	Word	Trip scan bit counter					
	V10246	DWORD	Temporary storage for trip display scan					
	V10300-V10337	Word	Trip Message look-up table					
	V12000	Word	Message Indicator for Text Display, Line 1					
	V12001	Word	Message Indicator for Text Display, Line 2					
	V12002	Word	Message Indicator for Text Display, Line 3					
	V12003	Word	Message Indicator for Text Display, Line 4					
	V12004	Word	Bit Read (LEDs)					
	V12005	Word	Bit Write (Buttons)					
	V12006	Word	BCD Value for status display 1					
	V12007	Word	BCD Value for status display 2					
			Timer Usage					
	T0		E:62PA01 delay					
	T1		E:62PA02 delay					
	T2		E:62WA01 delay					
	T3		E:62WA02 delay					

	T4		E:62WA03 delay					
	T5		E:62WA04 delay					
	T6		E:62WA05 delay					
	T7		E:62WA06 delay					
	T10		E:62WA07 delay					
	T11		E:62WA08 delay					
	T12		E:62WA09 delay					
	T13		LCW1 Motor Overtemp Delay					
	T14		E:62PA04 delay					
	T15		LCW over temp timer					
	T16		LCW1 motor overcurrent delay					
	T17		PV9 motor overcurrent delay					
	T20		LCW1 Motor Start/Stop delay					
	T21		LCW under temp timer					
	T22		LCW2 motor overcurrent delay					
	T23		LCW2 Motor Start/Stop delay					
	T24		PV9A-Lo overcurrent delay					
	T25		PV9B overcurrent delay					
	T26		PV9A-Hi Motor Start/Stop delay					
	T27		PV9A-Lo Motor Start/Stop delay					
	T30		PV9B Motor Start/Stop delay					
	T31		PV9 Pond Pump Differential Pressure Low Alarm Timer					
	T32		Watchdog Idle					
	T33		Watchdog Kick					
	T34		LCW2 Motor Overtemp Delay					
	T35		No Pond Circulation Trip Delay					
			Stage Usage					
	S0		LCW-1 OFF					
	S1		LCW-1 START					
	S2		LCW-1 ON					
	S3		LCW-1 STOP					
	S4		LCW-1 SHDWN					
	S5		Override Switch OFF					
	S6		Override Switch Set On					
	S7		Override Switch ON					
	S10		LCW-2 OFF					
	S11		LCW-2 START					

	S12		LCW-2 ON					
	S13		LCW-2 STOP					
	S14		LCW-2 SHDWN					
	S15		Override Switch Set Off					
	S20		PV9A-Hi OFF					
	S21		PV9A-Hi START					
	S22		PV9A-Hi ON					
	S23		PV9A-Hi STOP					
	S24		PV9A-Hi SHDWN					
	S30		PV9A-Lo OFF					
	S31		PV9A-Lo START					
	S32		PV9A-Lo ON					
	S33		PV9A-Lo STOP					
	S34		PV9A-Lo SHDWN					
	S40		PV9B OFF					
	S41		PV9B START					
	S42		PV9B ON					
	S43		PV9B STOP					
	S44		PV9B SHDWN					
	S50		Watchdog Idle					
	S51		Watchdog Kick					
	S60		Display panel initial state					
	S61		Display dispatch					
	S100		LCW1A					
	S101		LCW1B					
	S102		LCW2A					
	S103		LCW2B					
	S104		PV9AA					
	S105		PV9AB					
	S106		PV9BA					
	S107		PV9BB					
	S110-161		Sensor Readings Display					
	S170-176		Alarms Display					
	S200-204		Trips Display					

			Local Status Display					
			Automation Direct EZ420 4-line Panel					
			*Scroll through motor status, sensor data, and active alarms					
			MI-62 Outputs to Beam Permit System					
			Watchdog Timeout (from separate hardware watchdog timer)	NC Relay	JCK22-14			
			*Permit is dropped if the PLC fails to reset the timer due to gross					
			failure of the PLC or due to a PLC-internal critical error					
			Equipment List					
	Qty		Item	5V Draw	24V Draw			
	1		D4-450 CPU	-3100	0			
	1		D4-08B-1 8 Slot Base	80	0			
	1		H4-ECOM Copper Network Module	320	0			
	2		F4-16AD-1 16ch Analog Input	150	840			
	2		F4-08TRS-2 Relay Output, 4 Form C, 4 Form A	1150	0			
	1		EZ-420 Text Panel	0	170			
	1		PS24-050D 24V 2A Regulated Power Supply	0	-2000			
			Net Current Available	-1400	-990			

LOCAL ADR	TAGNAME	DESCRIPTION	ALARM LOW	ALARM HIGH	TRIP LOW	TRIP HIGH	DELAY	COMMENT
b2002.0	E:62PA01	PV9 water supply pressure low(after strainer)	0 psig				15 sec	disabled
b2002.1	E:62PA02	PV9 strainer differential pressure high		3 psi			15 sec	
b2002.3	E:62PA05	PV9 pond pump differential pressure low	10 psi				15 sec	
b2002.2	E:62WA01	LCW expansion tank level high		26 in			15 sec	
b2002.13	E:62WA02	LCW expansion tank level low	10 in				15 sec	
b2002.14	E:62WA03	LCW expansion tank level low low	8 in				15 sec	
b2004.6	E:62WA04	LCW expansion tank REALLY low			6 in		15 sec	
b2002.4	E:62WA05	LCW expansion tank air pressure low	5 psig				15 sec	
b2002.5	E:62WA06	LCW supply temp high		100 deg			15 sec	
b2002.6	E:62WA07	LCW supply temp low	70 deg				15 sec	
b2002.7	E:62WA08	LCW supply resistivity low	1 meg				15 sec	
b2002.8	E:62WA09	LCW DI btl resistivity low	5 meg				15 sec	
b2004.1	E:62WA11	LCW1 motor overtemp				11 mA	15 sec	
b2004.3	E:62WA15	LCW2 motor overtemp				11 mA	15 sec	
b2002.12	E:62PA04	PV9 pond supply pressure low (before strainer)	6 psig				15 sec	
b2003.3	E:62WA12	PLC critical error	ALARM	ALARM			0 sec	
b2003.2	E:62WA12	PLC warning	ALARM	ALARM			0 sec	
b2004.4	E:62 WA16	LCW supply temp hot				120 deg	15 min	
b2004.5	E:62WA17	LCW supply temp cold			60 deg		15 min	
b2004.0	E:62WA10	LCW1 motor overcurrent				150 A	15 sec	
b2004.2	E:62WA18	LCW2 motor overcurrent				150 A	15 sec	
b2004.11	E:62WA19	No pond circulation			TRIP	TRIP	5 min	
b2004.9	E:62PA07	PV9A overcurrent, high speed mode				40 A	15 sec	
b2004.9	E:62PA07	PV9A overcurrent, low speed mode				25 A	15 sec	
b2004.10	E:62PA08	PV9B overcurrent				25 A	15 sec	
b2004.7	E:62PA03	PV9A motor hot			TRIP	TRIP	0 sec	klixon opens
b2004.8	E:62PA06	PV9B motor hot			TRIP	TRIP	0 sec	klixon opens
		Min current for pond motor ON=2A						
		Min current for LCW motor ON=10A						

MI62 PERMITS	**(AND down, OR across)**	**OUTPUT**
BEAM PERMIT		
NOT E:62WA08 "LCW Supply Resistivity Low" (!b2002.7)	NOT E:62WA08 "LCW Supply Resistivity Low" (!b2002.7)	
NOT E:62WA16 "LCW Supply Temp Hot" (!b2004.4)	NOT E:62WA16 "LCW Supply Temp Hot" (!b2004.4)	
NOT E:62WA03 "LCW Tank Low Low" (!b2002.14)	NOT E:62WA03 "LCW Tank Low Low" (!b2002.14)	
NOT E:62WS02 "LCW2 Motor Running" (!b2001.1)	NOT E:62WS01 "LCW1 Motor Running" (!b2001.0)	
E:62WS01 "LCW1 Motor Running" (b2001.0)	E:62WS02 "LCW2 Motor Running" (b2001.1)	
"LCW1 ON state" (s2)	"LCW2 ON state" (s12)	
		Y16 to Pernicious Panel
		E:62WE01 "Beam Permit" (b2003.0)
POWER SUPPLY PERMIT		
E:62WE01 "Beam Permit" (b2003.0)		
		Y15 to MI62 power supplies
		E:62WE02 "Magnet Power Supply Permit"
		Y13 to MI60N power supplies