

## ***2002 - 2003 RHIC Power Supply Trouble Reports***

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**50 amp Corrector Power Supply Summary Report**

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Date	Time	Supply	S/N-R	Alcove	Analysis	Code	Fault	Status
26-Feb	Maint-day	208vac	R5C3		snugged 208vac terminals	X	Routine-Maint	
26-Feb	Maint-day	208vac	R5C4		snugged 208vac terminals	X	Routine-Maint	
3-Mar	Maint-day	208vac	R3C6	3C	snugged 208vac terminals	X	Routine-Maint	
5-Mar	Maint-day	208vac	R5C2		snugged 208vac terminals	X	Routine-Maint	
2-Apr	Maint-day	208vac	R3C4		gauge wires terminated at each power supply in the rack. The lugged wires on the screw terminal barrier strips were not checked.	X	Routine-Maint	
4-Dec	Start-up	bi12-tv10		1A	Would not turn on, cycled several times and the supply works.	S		
23-Jan	3:41:11	bi12-tv4		1A	Tripped off during a store, (running at -13.619amps steady, noticed voltage signal to be in the 12 o'clock area and those losses caused the permit to be pulled at the time.	OFF		
30-Jan	Maint-day	bi12-tv4	241	1A		OFF		Replaced PS
25-Jan	21:54:58	bi1-th11		1C	a dip while this corrector was off	OFF		
30-Jan	Maint-day	bi1-th11	550	1C	Tripping to Off, found off switch to be very sensitive to the touch while checking.	OFF		Replaced PS
3-Dec	Start-up	bi1-th19	430	1B	Power supply would not go to standby in remote or local, smell of smoke from inside the unit.	H	Houskeeping fuses	Replaced PS
9-Dec	Start-up	bi1-th3		1C	standby then on, okay now	S		
30-Jan	Maint-day	bi1-th7	377	1C	Trips to the Off state. Tested okay in the tunnel but replaced anyhow.	OFF		Replaced PS
4-Dec	Start-up	bi1-tv16		1B	Would not turn on, cycled several times and the supply works.	S		
9-Dec	Start-up	bi1-tv16		1B	standby then on, okay now	S		
9-Dec	Start-up	bi1-tv2		1C	standby then on, okay now	S		
4-Feb	1:32:57	bi1-tv2		1C	Tripped Off, (Over Voltage)	V		Reset
4-Feb	1:32:57	bi1-tv2		1C	Standby error, Over Voltage.	V		
3-Dec	Start-up	bi4-th11		5A	Voltage oscillating	X		Monitor
31-Dec	4:32:22	bi4-th7		5A	gains to be made for BRAHMS. We'll try steering at 2 o'clock.	V		
17-Mar	12:36:07	bi4-th7		5A	Snapramp Check, fill #03195 indicated an Over Voltage, Stby-error	V		Nothing to Report
13-Apr	19:14:26	bi4-th7		5A	Over Voltage, Stby-Error tripped during the ramp. MCR able to reset.	V		
13-Apr	23:59:00	bi4-th7		5A	23:59:00: bi4-th7 tripped; we were able to reset it.	V		
14-Apr	2:21:35	bi4-th7		5A	Mon Apr 14 02:21:35: comment by Angelika... Store got lost while steering PHENIX due to 9:00 snake BLMs. Notes from the MCR Log: -bi4-th7-ps has been turned off, keeps tripping off on an Over-voltage fault	V		On the Maintenance List for Repair
16-Apr	Maint-day	bi4-th7	447	5A	Next morning, supply tripped on error, replaced power supply.	E	Error signal	Replaced PS
23-Dec	3:29:43	bi4-tv16		5B	Tripped several times during this shift, Over-voltage error this trip.	V		
26-Dec	Maint-day	bi4-tv16	36	5B	Erratic tracking found between the current and the setpoint.	X		Replaced PS
3-Dec	Start-up	bi4-tv4		5A	Error signal when ramping, current would not follow the setpoint but when looked at, found nothing wrong.	E		
4-Dec	Start-up	bi4-tv4	47	5A	487	E	Error signal	Replaced PS
13-Apr	19:14:26	bi4-tv6		5A	refWfgDiff 2.146 Amps, range error	E	Controls problem	
2-Apr	11:41:25	bi5-dod3		5C	Snapshot indicated that this supply tripped to the Off state at this time.	OFF		

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9-Apr	Maint-day	bi5-oct3	66	5C	Supply had tripped OFF even with the new Rev-14 Micro update. Also found 208vac slightly loose (previously tightened on 03-05-03), DC connections checked and snugged at the magnet tree.	A	Tripped to Off State	Replaced PS
27-Feb	17:44:57	bi5-octd		5C	Tripped to the Off State	OFF		
5-Mar	Maint-day	bi5-octd		5C	Tripping to the Off state, replaced the old micro with the new Rev-14.	OFF		Replaced Micro to Rev-14
3-Dec	Start-up	bi5-sxs3		5C	these power supplies. Also found the setpoint cable disconnected at the low-res card.	X	Disconnected cable	Repaired
4-Dec	Start-up	bi5-tv2		5C	Would not turn on, cycled several times and the supply works.	S		
21-Jan	20:01:05	bi8-octd		9A	Running near zero current and tripped to the off state.	OFF		
30-Jan	Maint-day	bi8-octd	385	9A	Tripps to off, found standby and off switches to be sensitive, replaced supply.	OFF		Replaced PS
19-Jan	12:28:35	bi8-octf		9A	From Snapshot, power supply tripped to off.	OFF		
21-Jan	7:08:21	bi8-octf		9A	From Snapshot, power supply tripped to off.	OFF		
4-Dec	Start-up	bi8-th9	516	9A	internal components. Internal housekeeping supply failed.	X	Housekeeping supply	Replaced PS
12-Mar	Maint-day	bi8-tv10	335	9A	Tripped to the Off State, replaced the micro with the newest version, Rev 14.	OFF	Microprocessor chip	Replaced Micro to Rev-14
13-Apr	19:32:03	bi8-tv12		9A	most likely cause by bi8-tv12 tripping. bi8-tv12 cannot be turned back on, we have to compensate for it.	OFF		
14-Apr	20:15:00	bi8-tv12	457	9A	and MCR and replaced the supply.	OFF	Off State, will not recover	Replaced PS
18-Mar	0:16:37	bi8-tv4		9A	Snapramp Check, fill #03210 indicated Range Error, refwfgDiff of -1.065amps	E		
12-Jan	7:30:01	bi9-th13		9C	bi9-th13-ps range error)	W	Controls	
4-Dec	Start-up	bi9-th5		9C	Claimed to be oscillating, would not run up. Turned out to be the wrong ramp rate and after changing it to a higher value, supply responded okay.	X	Wrong ramp rate	Repaired
4-Dec	Start-up	bi9-th9		9C	Claimed to be oscillating but when looked at, found nothing wrong.	X		
12-Jan	11:04:38	bi9-tv12		9C	(bi9-tv12-ps range error)	W	Controls	
19-Feb	Maint-day	bi9-tv14	331	9C	Trips to the OFF state, replaced Microprocessor chip to Rev-14 in power supply	OFF	Microprocessor chip	Replaced IC
19-Feb	Maint-day	bi9-tv16	463	9B	Trips to the OFF state.	OFF		Replaced PS
9-Mar	0:19:07	bi9-tv18		9B	Tripped on Over-voltage.	V		
12-Mar	Maint-day	bi9-tv18		9B	magnet connections. (Produced error when ramps with high rates)	V		Tightened magnet connections
20-Feb	Maint-Day	bo11-qs3		11C	Iref and the Current seem low, scale factor wrong?	X		
13-Jan	Maint-day	bo2-octf		3A	Power Supply error messages (range error) and (OFF)	E		Area swept, tunnel access denied.
17-Jan	15:37:37	bo2-octf		3A	From Snapshot, power supply tripped to off.	OFF		
30-Jan	Maint-day	bo2-octf	165	3A	Tripping to Off, found off switch to be very sensitive to the touch while checking.	X		Replaced PS
5-Dec	Start-up	bo2-th20		3B	After power down to the rack to repair bo2-tv17, when powered up the supply would not go to units in the rack did not require this step.	S		
9-Mar	2:21:52	bo2-th6		3A	Corrector alarm page indicates Over-voltage several times for this day, starting at 2:21:52, 5:43:08, 9:58:14 and 15:44:22	V		
12-Mar	Maint-Day	bo2-th6		3A	Indicating Stby-Error when the supply was On. Replaced Node card cable and also found magnet connections to be loose, (able to get one full turn on connectors).	E	Node card cable / Loose magnet connections	Replaced/Repaired
5-Dec	Start-up	bo2-tv17		3B	on the back. Replaced the board and all works fine now.	X	Compensator Board	Replaced TC

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4-Dec	Start-up	bo2-tv9	575	3A	Failed on quench, high error, output voltage high, unit was swapped out but conditions remained. Turns out that the lead going into the magnet tree had been disconnected.	D	Magnet Lead disconnected	Repaired
5-Dec	Start-up	bo3-qs		3C	Unable to send any control commands to the supply, Node card cable checked and just by moving it around, problem corrected itself. Both ends examined for loose or broken wires, nothing wrong was found. Restored and unit still works.	X	Node card cable	Repaired
19-Feb	Maint-day	bo3-qs3		3C	Diff in values: Measure MADC signals into patch panel and compare with the front of power supply (Controls found faulty MADC board)	M	Diff in values	Replaced MADC board
20-Feb	Maint-Day	bo3-qs3		3C	Problem with the MADC readbacks, no Iref present.	M		
26-Feb	Maint-day	bo3-qs3		3C	Checked AC connections, found Iref lemo disconnected at the MADC panel ( <a href="#">Ref to 20-Feb</a> )	M	Iref Lemo disconnected	Repaired
5-Dec	Start-up	bo3-th12		3C	try. Cycled several times to be sure, found nothing wrong.	X		
7-Dec	Start-up	bo3-th12		3C	standby then on, okay now	L		
11-Dec	Start-up	bo3-th12	210	3C	No longer responding (Ref to 7-Dec), Must be replaced with another power supply. ( <a href="#">Access made on Dec 16 to replace the power supply</a> )	X		Replaced PS
17-Mar	18:03:54	bo3-th12	451	3C	STANDBY the iref and current both jump up to 6.7Amps and the voltage jumps to 1352mV. When you turn the p.s. ON the MADC readbacks don't change and are unaffected by setpoint	X		Replaced PS
19-Feb	Maint-day	bo3-th2		3C	Diff in values: Measure MADC signals into patch panel and compare with the front of power supply (Controls found faulty MADC board)	M	Diff in values	Replaced MADC board
19-Feb	Maint-day	bo3-th4		3C	Diff in values: Measure MADC signals into patch panel and compare with the front of power supply (Controls found faulty MADC board)	M	Diff in values	Replaced MADC board
19-Feb	Maint-day	bo3-th8		3C	Diff in values: Measure MADC signals into patch panel and compare with the front of power supply (Controls found faulty MADC board)	M	Diff in values	Replaced MADC board
19-Feb	Maint-day	bo3-tv10		3C	Diff in values: Measure MADC signals into patch panel and compare with the front of power supply (Controls found faulty MADC board)	M	Diff in values	Replaced MADC board
5-Dec	Start-up	bo3-tv17		3B	try. Cycled several times to be sure, found nothing wrong.	S		
19-Feb	Maint-day	bo3-tv17	130	3B	Trips to the OFF state.	OFF		Replaced PS
19-Feb	Maint-day	bo3-tv5		3C	Found one of the internal cooling fans not operational.	X	cooling fan	To be Replaced
5-Mar	Maint-day	bo3-tv5	183	3C	DC connections in the rack (R3C5) to be loose.	X		Replaced PS
19-Feb	Maint-day	bo3-tv9		3C	Diff in values: Measure MADC signals into patch panel and compare with the front of power supply (Controls found faulty MADC board)	M	Diff in values	Replaced MADC board
26-Jan	16:17:24	bo6-octd		7A	PS error messages, bo6-octd-ps 37768:Jan 26 16:13:46 2003:cfe-7a-ps1:tNotifCD: WARNING:< ADO:psCtrlM.7a-ps1.3G:stateMismatch >:< Off >	OFF		
27-Jan	23:24:17	bo6-octd		7A	PS error messages, bo6-octd-ps < Off >	OFF		
28-Jan	1:18:24	bo6-octd		7A	( <a href="#">Ref to bo7-tv13, 28-Jan, 01:18:24</a> )			
30-Jan	Maint-day	bo6-octd	605	7A	Tripping to Off, found off switch to be very sensitive to the touch while checking.	OFF		Replaced PS
10-May	15:02:06	bo6-tv11		7A	Tripped to the OFF state while running at -3.047amps	OFF		
10-May	15:35:05	bo6-tv11		7A	Tripped to the OFF state while running at -3.055amps	OFF		
10-May	15:38:28	bo6-tv11		7A	Tripped to the OFF state while running at -3.050amps	OFF		
11-May	0:30:50	bo6-tv11		7A	Tripped to the OFF state while running at zero current, MCR tuned around magnet.	OFF	Will not stay ON	Needs to be replaced, put on the maintenance list
12-May	13:25:41	bo6-tv11		7A	Tripped to the Off State	OFF	Off State	On the List for Repair
12-May	17:53:00	bo6-tv11		7A	Tripped to the Off State	OFF	Off State	On the List for Repair
12-May	23:54:50	bo6-tv11		7A	Tripped to the Off State	OFF	Off State	On the List for Repair
13-May	1:07:05	bo6-tv11		7A	Tripped to the Off State	OFF	Off State	On the List for Repair

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13-May	18:01:09	bo6-tv11		7A	Tripped to the Off State	OFF	Trips to the Off	Will be replaced next maintenance
16-May	Maint-day	bo6-tv11	429	7A	Tripping to the Off state multiple times, supply was pulled and replaced with a spare (s/n 276 that contains the new REV-15 microprocessor). Also found DC cables not very tight at the power supply, retightened. Also tightened the AC power leads and checked the magnet connections.	OFF	Tripping to OFF	Replaced PS
26-Feb	22:14:55	bo7-oct2		7C	Tripped to the Off State	OFF		
27-Feb	3:32:02	bo7-oct2		7C	Tripped to the Off State	OFF		Replace Micro
28-Feb	5:35:07	bo7-oct2		7C	Tripped to the Off State	OFF		
5-Mar	Maint-day	bo7-oct2		7C	Tripping to the Off state, replaced the old micro with the new Rev-14.	OFF		Replaced Micro to Rev-14
21-Feb	3:02:59	bo7-th14	372	7C	Trips to the Off state, unable to recover, CAS replaced supply	OFF		Replaced PS
3-Dec	Start-up	bo7-th6	435	7C	Power supply would not go to standby in remote or local.	H	Houskeeping fuses	Replaced PS
17-Apr	Maint-day	bo7-th6		7C	One of its cooling fans has malfunctioned but does not affect the supply at this time.	X	cooling fan	
23-Apr	Maint-day	bo7-th6	21	7C	One of its cooling fans has malfunctioned but does not affect the supply at this time. (Fan Plug was disconnected internally)	X	cooling fan	Replaced PS
6-Mar	0:29:28	bo7-th8		7C	Snapshot indicated that this supply tripped to the Off state at this time.	OFF		Nothing to Report
6-Mar	0:29:28	bo7-th9		7C	Snapshot indicated that this supply tripped to the Off state at this time.	OFF		Nothing to Report
27-Jan	11:33:04	bo7-tv13		7C	Standby error, needs to be replaced, MCR will steer around for now.	E		
28-Jan	1:18:24	bo7-tv13		7C	Moving them to Standby results in readback spikes of several amps before returning back to zero and the power supply stays off, even though WFGs have been manually ramped to zero.	OFF		
30-Jan	Maint-day	bo7-tv13	312	7C	anyhow.	OFF		Replaced PS
11-Apr	21:55:00	bo7-tv13		7C	bo7-tv13 should be replaced when time allows.	E		On the Maintenance List for Repair
17-Apr	Maint-day	bo7-tv13	210	7C	Found overtemp and error. Overtemps clear. Snugged AC & DC. Ramps fine. Parked at +30amps overnight, error in the wee small hours. Replaced PS. DC load is 0.3 ohms, 10k ohms to gnd w/ps connected. Electrical AC breaker panel inspection by Bubby and PK Feng. Opened panel, checked voltages. Read feed at 199VAC. Had tap moved on substation, raised to 204VAC. 120Vac power strip 114VAC, affects only node card and low resolution chassis.	T		Replaced PS
13-May	shop	bo7-tv13	210		Problem: Trips Off Error, Upgraded the Micro to REV-15, R610 trimmed to 3.65kohms (7.8 - 7.9vdc)		Error signal	SHOP TIME
5-Mar	22:53:59	bo7-tv9		7C	Snapshot indicated that this supply tripped to the Off state at this time.	OFF		Nothing to Report
6-Mar	1:04:47	bo7-tv9		7C	Snapshot indicated that this supply tripped to the Off state at this time.	OFF		Nothing to Report
9-Apr	20:00:07	yi10-tv18			No current readback on the PET Page. Found the MADC cable to be plugged into the wrong slot (J-15). Moved it to the J-13 slot where it belongs. (Mystery solved: Control group had been in the alcove checking the rack and had accidentally placed it into the wrong slot)	M	No Current Readback	Repaired
5-Mar	22:53:59	yi10-tv2		11A	Snapshot indicated that this supply tripped to the Off state at this time.	OFF		Nothing to Report
20-Jan	22:36:56	yi11-th5		11C	Tripped off, MCR was able to turn back on without difficulty.	OFF		
25-Jan	21:41:54	yi11-th5		11C	rates to increase	OFF		
30-Jan	Maint-day	yi11-th5	276	11C	Trips to the Off state. Tested okay in the tunnel but replaced anyhow.	OFF		Replaced PS
15-Apr	11:04:07	yi11-tv6	231	11C	tough to MCR to compensate for and therefore request that it be replaced.	OFF	Trips at 0.5amps	Replaced PS
7-May	21:50:55	yi2-th13		3A	Power supply tripped to the OFF state	OFF		Will be replaced next maintenance
9-May	Maint-day	yi2-th13	200	3A	Removed supply and installed with s/n 608 that has the new REV-15 Micro chip.	OFF	Tripped to the Off state	Replaced PS
13-May	shop	yi2-th13	200		Problem: would shut OFF, Upgraded the Micr to REV-15, added the cap/resistor mod to the Off Switch, D707 modified		OFF	SHOP TIME
23-Mar	3:57:07	yi2-tv18	127	3B	Supply tripped while it was ramped to 1 amp indicating an error signal.	E	Error signal	Replaced PS

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19-Mar	Maint-day	yi2-tv4		3A	Does not indicate LOCAL on the pet page when in local mode.	X		Needs to be checked
7-Apr	12:51:37	yi3-th13	608	3C	Tripped to the Off State, running at 1.05amps. Unable to recover from shop terminal or from MCR, but worked fine from laptop in tunnel alcove. The Node Card Cable was also replaced even though the old cable showed no signs of trouble.	OFF	Tripped to Off State	Replaced PS
16-Apr	Maint-day	yi3-th13		3C	Tightened magnet connections, ramped up and down with no errors, left to run overnight at to 1 second. This is to fast for this supply.	E	Error signal	Wrong ramp rate
1-May	22:13:05	yi3-th13		3C	Snapshot reveals: Tripped to the Off State while running at +4.74amps	OFF		
9-May	Maint-day	yi3-th13	276	3C	Installed power supply with one that has the new Parking Circuit & REV-15 Micro. Found ramprate set to 1 second! The parking circuit works okay up to 3amp (0.6 vdc setpoint). However a quench condition (and subsequent fault) is created when the current is suddenly applied to the magnet. (New ps s/n 193)	E	Tripped to Error State	Replaced PS
9-May	shop	yi3-th13	276		Problem: ERROR, Upgraded the Micro to REV-15, raised R610 on the HKPS to 3.32Kohms to increase the trip threshold.		Error signal	SHOP TIME
16-Mar	9:11:53	yi3-tv10		3C	Snapshot revealed that this supply had tripped to the OFF state.	OFF		
16-Mar	9:11:53	yi3-tv10		3C	Snapshot indicated that this supply tripped to the Off state at this time.	OFF		
16-Mar	9:21:41	yi3-tv10		3C	Snapshot revealed that this supply had tripped to the OFF state.	OFF		
19-Mar	Maint-day	yi3-tv10	468	3C	chip and the new RC mod made to the OFF switch.	OFF		Replaced PS
12-Feb	11:03:40	yi3-tv16		3B	Tripped to the off state, able to recover.	OFF		
21-Feb	3:57:48	yi3-tv16		3B	Tripped to the off state.	OFF		
21-Feb	13:54:22	yi3-tv16		3B	Tripped to the off state and unable to recover. Will need tunnel access to investigate.	OFF		
21-Feb	16:30:07	yi3-tv16	143	3B	Tripped to the Off state and unable to recover.	OFF		Replaced PS
5-Mar	Maint-Day	yi3-tv16		3B	Tripped to error fault (Ref to 28-Feb), current had jumped upwards. Power supply to be replaced.	E		
12-Mar	9:00:07	yi3-tv16	130	3B	and tightened all AC and magnet connections. (Note: Burning smell in the alcove, unable to locate the source) Supply produced errors at high ramp rates.	E		Replaced PS
12-Mar	15:56:07	yi3-tv16	466	3B	Overtemp. This was the source of the burning smell.	X		Replaced PS
14-Mar	21:24:57	yi7-oct3		7C	Snapramps Check, fill 03177 indicated (No PS / Illegal State)	X		
17-Mar	23:40:56	yi7-oct3		7C	Snapramp Check, fill #03209 indicated No PS / Illegal State (Possible Node Card Cable)	X		Needs to be checked
24-Mar	Maint-day	yi7-oct3	593	7C	Sometimes the supply status would read back (No Power Supply) Node card cable to be the suspect as the supply was actually on.	X	Node Card Cable	Replaced Cable
28-Mar	19:38:34	yi7-sx3		7C	Error Signal Fault	E		
28-Mar	22:12:39	yi7-sx3		7C	Standby-Error Fault	E		
30-Mar	1:26:51	yi7-sx3		7C	No PS / Illegal State	X		
31-Mar	6:08:37	yi7-sx3		7C	Standby-Error Fault	E		
1-Apr	2:08:14	yi7-sx3		7C	Lead Flow	T		
1-Apr	2:56:38	yi7-sx3		7C	No PS / Illegal State	X		
1-Apr	9:40:45	yi7-sx3		7C	Alarm Log indicated Overtemp, Error Signal and DC Overcurrent. Looking at Pet Page, supply was running.	T		
2-Apr	Maint-day	yi7-sx3		7C	(Ref to 1-Apr) No PS / Illegale State and other multiple alarms that where not real.	X	Node Card Cable	Replaced Cable
10-Dec	Start-up	yi7-th13		7C	Setpoint and MADC not close to matching, found problem to be with controls, low res card.	M	Low Res Card	Replaced Card
16-Dec	Start-up	yi7-th13		7C	REF to Dec 10 (Setpoint and MADC not close to matching, found problem to be with controls, low res card.) Problem still exist, Controls group will look into.	M	Low Res Card	Replaced Card
2-Jan	Maint-day	yi7-th3		7C	Indicated that the supply had tripped to OFF, no AC Power: 889:Jan 2 01:27:05 2003:cfe-7c-ps2:tNotifCD: WARNING:< ADO:psCtrlM.7c-ps2.5A:statusM >< No PS / Illegal State >	OFF		
11-Jan	9:32:07	yi7-th3		7C	Snapshot shows that the power supply is in STBY-ERROR when its status indicates AC Power, ON, Remote. Controls needs to have a look at this one	E		
17-Jan	19:41:25	yi7-th3		7C	From the physics logs: (No power supply / Illegal State)	X		

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19-Jan	7:35:19	yi7-th3		7C	From the physics logs: (No power supply / Illegal State)	X		
19-Jan	21:59:00	yi7-th3		7C	From the physics logs: (No power supply / Illegal State)	X		
25-Jan	0:16:24	yi7-th3		7C	PS error messages, yi7-th3-ps 579:Jan 25 00:12:26 2003:cfe-7c-ps2:tNotifCD: WARNING:< ADO:psCtrlM.7c-ps2.5A:stateMismatch >:< Stby-Error >	E	Controls	
30-Jan	Maint-day	yi7-th3	342	7C	No PS, illegal state or standby error when on. Found standby switch to be sensitive off to standby while checking.	OFF		Replaced PS
1-Feb	4:11:08	yi7-th3		7C	No power supply / Illegal state	X		
19-Feb	Maint-day	yi7-th3		7C	Replaced Node Card Cable, checked over Node Card Chassis, all looks okay. (Left old node card cable in place)	X	Node card cable	Replaced N/C Cable
19-Feb	Maint-day	yi7-tv18	416	7B	Trips to the OFF state, replaced Microprocessor chip to Rev-14 in power supply	OFF	Microprocessor chip	Replaced IC
6-Mar	2:24:29	yi7-tv4		7C	Snapshot indicated that this supply tripped to the Off state at this time.	OFF		Nothing to Report
11-Dec	Start-up	yo12-tv17		1B	Iref contains a 0.7 amp offset, will need tunnel access to look into the problem. (Tunnel accessed on Dec 16, found nothing unusual, will continue to monitor)	X		
17-Dec	5:30:09	yo12-tv17		1B	Continues to trip to standby, needs to be further investigated or replaced during the next maintenance day	E		
18-Dec	Maint-day	yo12-tv17	251	1B	Tripping on Error, Maintenance day, supply to be swapped.	E	Error signal	Replaced PS
3-Feb	2:30:20	yo1-qs		1C	Tripped to the off state.	OFF		
19-Feb	Maint-day	yo1-qs	538	1C	Trips to the OFF state.	OFF		Replaced PS
16-Dec	Start-up	yo1-th10	541	1C	allowed for tunnel access)	OFF		Replaced PS
16-Dec	Start-up	yo1-th12	538	1C	allowed for tunnel access)	OFF		Replaced PS
29-Apr	15:43:59	yo1-tv13		1C	Snapshot indicates AC Power, Remote, tripped to OFF State.	OFF	Tripped to Off State	
1-May	Maint-day	yo1-tv13	193	1C	(Ref to 29-Apr tripping to the OFF State) Replaced power supply and also snugged 208vac rack terminals and the DC Magnet connections - all checked okay.	OFF		Replaced PS
8-May	11:20:50	yo1-tv13		1C	Power Supply tripped to the Standby Error, 5 minutes later IrefCurrentRange.	E		
29-May	1:41:43	yo1-tv13		1C	it could be noise on the signal.	E		
29-May	2:23:41	yo1-tv13		1C	spikes up to 1.859amps and at the same time the voltage spikes down to 684.81mV. (IrefCurrentRangeError)			
29-May	2:38:42	yo1-tv13		1C	remained at zero before suddenly spiking up. Then the Iref was ramped down and current followed.			
19-Jan	18:12:58	yo1-tv5		1C	From Snapshot, power supply tripped to off.	OFF		
30-Jan	Maint-day	yo1-tv5	129	1C	Error trip, local-remote switch slightly intermit.	E		Replaced PS
13-Feb	9:29:38	yo1-tv5	377	1C	just get a store up. Pol proton guys (Keith and Mei) are running out of patients.	OFF		Replaced PS
26-Feb	17:46:27	yo4-qs3		5A	Tripped to the Off State	OFF		
26-Feb	19:17:43	yo4-qs3		5A	Tripped to the Off State	OFF		To be Replaced
26-Feb	Maint-day	yo4-qs3		5A	Micro Rev-14 replaced, AC connections checked, supply ran up okay.	OFF		
5-Mar	Maint-day	yo4-qs3	118	5A	modification added to the off push button (RC network) was put in its place. Also 208vac terminal block, phase A had a broken screw so it was moved to the adjacent terminal.	OFF		Replaced PS
5-Mar		yo4-th12		5A	Trips to the Off state, requested to be replaced next maintenance day.	OFF		
12-Mar	Maint-Day	yo4-th12	163	5A	Tripped to Off on March 2, will replace the Microprocessor.	OFF	Microprocessor chip	Replaced Micro to Rev-14
30-Jan	Maint-day	yo4-th2		5A	broken. Reported, and on the next maintenance, it should be repaired.	X	Local-Remote Switch Broken	Next Maint., Needs to be repaired.

### 50 amp Corrector Power Supply Summary Report

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19-Feb	Maint-day	yo4-th2	495	5A	Trips to the OFF state, also found local / remote switch broken.	OFF		Replaced PS
21-Feb	22:53:32	yo4-th2	207	5A	Trips on Error, current does not follow wfg setpoint.	E		Replaced PS
11-Apr	15:00:00	yo4-th20		5B	Right side, rear cooling fan malfunctioned. Team tried to re-vive but unable.	X	cooling fan	Needs to be replaced
26-Feb	Maint-day	yo5-dec2		5C	Micro Rev-14 replaced, AC connections checked, supply ran up okay.	X		
26-Feb	Maint-day	yo5-dod3		5C	Micro Rev-14 replaced, AC connections checked, supply ran up okay.	X		
5-Feb	4:19:26	yo5-oct2		5C	Tripped Off	OFF		
17-Mar	11:20:03	yo5-oct2		5C	restore.	OFF		
2-Apr	Maint-day	yo5-oct2	87	5C	(Ref to 17-Mar) Tripping to the off state. Also checked magnet connections and found that they were tight.	OFF		Replaced PS
19-Feb	Maint-day	yo5-octd	97	5C	Trips to the OFF state.	OFF		Replaced PS
26-Feb	Maint-day	yo5-octd		5C	Tightened all DC terminals at the magnet trees (Q9, 11, 13, 15 & 17) and at the rear of the power supply.	D		
9-Jan	9:07:58	yo5-th14	72	5C	MCR reported that the power supply would not recover from the maintenance day (Jan 8) and that they needed it for operations.	OFF		Replaced PS
10-Apr	4:26:06	yo5-th16			about this supply as of this writing)	OFF		
11-Apr	15:00:00	yo5-th16	293	5B	decided that they wanted it replaced. The 208 vac snugged R5B3 but team was unable to cross over thru B gate because MCR didn't want to chance losing the sweep.	OFF	Tripped to Off State	Replaced PS
21-May	10:24:42	yo5-th16		5B	-177.20mV then jumped to +317.84mV. Iref remained constant.			
21-May	23:07:28	yo5-th16		5B	may become a candidate for maintenance.		Monitoring	
24-May	6:18:00	yo5-th16		5B	Tripped and was reset.	E	Error Fault	
24-May	10:16:33	yo5-th16		5B	necessary, we will compensate for it.JPJ	E	Error Fault	
24-May	20:30:00	yo5-th16	87	5B	out the supply. 21:00:11 CAS (Harold and Joe) will be swapping out yo5-th16-ps in alcove 5B. It did have this p.s. on our maintenance list for Tuesday May 27th. Don (s/n 207 went into place)	E	Error Fault	Replaced PS
25-May	10:25:21	yo5-th16		5B	Supply continues to trip, MCR called Don and he will send CAS into the tunnel to further investigate.	E	Error Fault	
25-May	11:57:39	yo5-th16		5B	Comment by Don: May have a loose connection at the magnet since we CAS already swapped checked. 14:46:49: comment by Sanjee... It was my mistake. I had left yo5-th16 at 25A after turning it on at injection current, then ramping to 25A to make sure it doesn't trip.	E	Error Fault	MCR Operator Error
26-May	1:05:00	yo5-th16		5B	Comment by MCR: yo5-th16-ps & yo5-th18-ps have tripped off.			
26-May	3:45:00	yo5-th16		5B	Comment by MCR: yo5-th16-ps tripped off again and was restored. Comment by Don: CAS went down and checked to see the magnet connections were tight. They said they were not really loose but they got maybe a quarter of a turn on one screw. Next they checked the ac rack strip.		Error Fault	Loose Connections
26-May	10:25:15	yo5-th16		5B	yo5-th16-ps 3261:May 26 10:25:15 2003:cfe-5b-ps2:tNotifCD: WARNING:<ADO:psCtrlM.5b-ps2.4B:statusM >>< Error signal >		Error Fault	
27-May	Maint-day	yo5-th16		5B	Verified all connections			
26-May	1:05:00	yo5-th18		5B	Comment by MCR: yo5-th18-ps have tripped off.		Off	

### 50 amp Corrector Power Supply Summary Report

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27-May	Maint-day	yo5-th18	266	5B	Tripped to the OFF state on (Ref 26-May). Corrector Team found the supply was shutting off so they replaced it with s/n 231 and checked all AC and DC connections.		Off	Replaced PS
28-Feb	21:00:00	yo5-th2	273	5C	Has tripped to the off state and will not go back into standby. CAS replaced as this supply happens to be an important steerer for the STAR experiment.	OFF		Replaced PS
19-May	Maint-day	yo5-th20	256	5B	maintenance day was given to the group to fix this. <a href="#">Team went in and replaced the power supply with a spare unit, s/n 210.</a>	OFF	Tripped to Off State	Replaced PS
9-Apr	Maint-day	yo7-dod3		7C	Checked DC Magnet connections and found them to be 1/4 to 1/2 of a turn loose.	D		Tightened magnet connections
9-Apr	Maint-day	yo7-dod3		7C	Indicates Stby-Error. This is located in the same rack where several Node Card Cables had been replaced do to the same faults for other supplies. Each time a cable was replaced, the problem would fix for that supply but then indicate another supply at fault.	E	Node Card Chassis	Replaced
12-Mar	Maint-day	yo8-dod3	452	9A	Tripped to Off State, will replace the Microprocessor.	OFF	Microprocessor chip	Replaced Micro to Rev-14
30-Jan	22:42:49	yo8-oct2		9A	Snapshot shows that the power supply is in STBY-ERROR when its status indicates AC Power, ON, Remote. Controls needs to have a look at this one	E	Controls	
12-Jan	7:30:01	yo8-octf		9A	(yo8-octf-ps I/O difference)	M	Controls	
21-Feb	10:14:52	yo8-th10		9A	Tripped to Off, running at -0.50amps.	OFF		
14-Feb	2:20:47	yo8-th14		9A	Tripped to Off, Snapshot indicates that the magnet may have quenched. (Current rises as voltage drops at the same time).	OFF		
19-Feb	Maint-day	yo8-th14	449	9A	Trips to the OFF state, replaced Microprocessor chip to Rev-14 in power supply	OFF	Microprocessor chip	Replaced IC
19-Jan	17:32:32	yo8-th2		9A	Tripped to off when running at -12amps.	OFF		
30-Jan	22:42:49	yo8-th2		9A	Snapshot shows that the power supply is in STBY-ERROR when its status indicates AC Power, ON, Remote. Controls needs to have a look at this one	E	Controls	
30-Jan	Maint-day	yo8-th2	284	9A	Tripping to Off, found off switch to be very sensitive to the touch while checking.	OFF		Replaced PS
19-Feb	Maint-day	yo8-th2		9A	Reported that the local / remote switch was broken. Crew found switch to be okay.	X		
4-Mar	18:05:07	yo8-th2	72	9A	Tripped to the Off state and was unable to recover. CAS Replaced the supply.	OFF		Replaced PS
13-Mar	16:32:48	yo8-th4		9A	Range error of -1.710amps	E		Nothing to Report
25-Jan	9:11:43	yo8-th8		9A	the entire ramp. However, its VALUE is 2.198, not zero. <a href="#">09:14:03: comment by CM... Ok, finally it responded, and it's ok now.</a>	OFF		
30-Jan	Maint-day	yo8-th8	445	9A	Trips to the Off state. Tested okay in the tunnel but replaced anyhow.	OFF		Replaced PS
30-Jan	23:48:48	yo8-tv11		9A	Running no-beam hysteresis cycle and returning to deuterons to restore beam operations to RHIC. At this point both rings are nearing flattop; yo8-tv11-ps has tripped off.	OFF		
31-Jan	5:53:20	yo8-tv11		9A	Tripped to Off.	OFF		
8-Mar	13:16:49	yo8-tv11		9A	Tripped to the OFF state.	OFF		
11-Mar	10:38:59	yo8-tv11		9A	Tripped to the Off state.	OFF		
12-Mar	Maint-Day	yo8-tv11		9A	microprosser Rev-14)	OFF		
17-Mar	13:22:29	yo8-tv11		9A	Snapshot indicated that this supply tripped to the Off state at this time.	OFF		
19-Mar	Maint-day	yo8-tv11	276	9A	Replaced with s/n 118 that also includes the new rev-14 micro chip and the new RC mod made to the OFF switch.	OFF		Replaced PS
20-Feb	21:39:42	yo8-tv15		9B	Multiple trips to the OFF state as MCR works on an aperture test	OFF		
26-Feb	Maint-day	yo8-tv15		9B	Micro Rev-14 replaced, AC connections checked, supply ran up okay.	X		
17-Mar	11:20:05	yo8-tv7		9A	Snapshot indicated that this supply tripped to the Off state at this time.	OFF	Power Dip	Recovered
5-Mar	23:33:29	yo8-tv9		9A	Snapshot indicated that this supply tripped to the Off state at this time.	OFF		Nothing to Report
7-Mar	2:38:30	yo9-th18		9B	Snapshot indicated that this supply tripped to the Off state at this time.	OFF		Nothing to Report
15-Jan	Maint-day	yo9-tv11		9C	MCR reported that the power supply would trip on Overvoltage, checked all connection and found them to be tight, exercised the supply and found nothing wrong.	V		
15-Feb	6:45:57	yo9-tv11		9C	Trips to the OFF state	OFF		

### 50 amp Corrector Power Supply Summary Report

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19-Feb	Maint-day	yo9-tv11	466	9C	Oscillating? Check to make sure the compensation circuit (T.C.) is correct	X		Replaced PS
2-Dec	Start-up	yo9-tv5	???	9C	Power supply would not go to standby in remote or local. Found blown fuses on the internal housekeeping power supply.	H	Houskeeping fuses	Replaced PS
12-Apr	12:35:19	yo9-tv9		9C	error "server host not reachable"	E	Controls problem	

**60 amp Corrector Power Supply Summary Report**

RHIC Physics 2002-2003

Date	Time	Supply	S/N	Alcove	Analysis	Fault	Status
11-Dec	Start-up	yo8-qs3		9A	Controls problem, Iref readback contains a 3+ amp offset. Reset the MADC bucket, offset remained, disconnected the MADC cable, readback maintained a 3amp listing on the pet page. Controls group will look into		
18-Dec	Maint-Day	yo8-qs3		9A	MADC problem on the controls end. Seems after moving some cables around from their patch panel, problem went away ( <a href="#">Ref to 11-Dec</a> )	Controls Signal Cables	
30-Jan	22:42:49	yo8-qs3		9A	Snapshot shows that the power supply is in STBY-ERROR when its status indicates AC Power, ON, Remote. Controls needs to have a look at this one	Controls	
30-Jan	23:43:21	yo8-qs3		9A	problem - discovered at 2100hrs)	Controls	
20-Feb	Maint-Day	yo8-qs3		9A	Iref problem still exist with controls	Controls	Unknown

### Dynapower Power Supply Summary Report

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Date	Time	Supply	Analysis	Fault	Status
16-Apr	Maint-Day	b12-dh0	Faulty cooling fan found internally during Routine Inspection located in the rear DC compartment. This did not cause the supply to fault but was replaced as general maintenance.	Cooling Fan Fault	Repalced
1-Dec	Start-Up	b12-q6	Would not turn ON, Error Fault would come up.	Control Card	Replaced Card
2-Dec	Start-Up	b12-q6	Possible sticking contactor.		
3-Dec	Start-Up	b12-q6	When the on command is sent, the contactor closes but the control card never gets the on status, after the 4 second time out, the supply trips on error fault.	Auxiliary set of contacts	Replaced
16-Apr	Maint-Day	b12-q7	Faulty cooling fan found internally during Routine Inspection located in the rear DC compartment. This did not cause the supply to fault but was replaced as general maintenance.	Cooling Fan Fault	Repalced
3-Dec	Start-Up	b2-dh0	dmmCurrent=1.69A, dmmDAC=2.033A.		Monitoring
8-Jan	Maint-Day	b2-dhx	Iref would remain at zero during run up then suddenly spike to setpoint causing the power supply to trip, (Crowbar). Found the Local/Remote switch failed internally thinking the supply was in local with a zero setpoint when actually it was in remote, then making contact causing the setpoint to spike upwards.	Current Reg Card	Repaired Card
16-Apr	Maint-Day	b2-dhx	Replaced Fiber Optics vard as per maintenance schedule	Fiber Optics card	Replaced
7-May	2:36:40	b2-dhx	Crowbar Fault, MCR tried to resume the recovery script and the Blue link went down. They suspected it was because the supplies were already at 50A when the script tried to turn on the supplies	Crowbar	Reset
6-Feb	Maint-Day	b4-dhx	Top roof front right fan not working.		
19-Feb	Maint-Day	b4-dhx	Replaced fan ( <a href="#">Ref to 6-Feb, Maint-Day</a> )	Air cooling fan.	Replaced Fan
22-Mar	8:44:28	b4-dhx	Loss of AC power. Team came in to investigate and found the Main Contactor located inside the power supply had a bad day. Phase A was destroyed due to a loose connection causing it to pull extreme current, heating up, then melt down occurred.	Main Contactor	Replaced
26-Dec	Maint-Day	b6-dhx	dmm readbacks sloppy, found test points that are used on the current regulator card to be loose, common pin was actually broken. Board damaged due to test point twisting, a wire was added to replace the damaged circuit land.	Current Reg Card	Replaced Card
8-Dec	Start-Up	b8-q6	Read half current at the BNC of the buffer card, found nothing wrong with the card but believe that it was not seated properly into the 3U chassis.	buffer card not seated	Repaired.
6-Feb	Maint-Day	bi12-q7	Top roof center air cooling fan not working.		
26-Feb	Maint-Day	bi12-q7	Replaced roof fan and discovered the three (3) fans that cool the SCR banks where not working. Replaced those too. ( <a href="#">Ref to 6-Feb</a> )	Cooling Fans (4)	Replaced Fan
3-Dec	Start-Up	bi12-qf3	When the on command is sent, the contactor closes but the control card never gets the on status, after the 4 second time out, the supply trips on error fault.	Auxiliary set of contacts	Replaced
12-Dec	14:24:44	bi4-qd6	Current spiked to 422 amps T= -0.04sec (postmortems) causing the quench detection to trip. Power Supply Voltage ripple = 700mV so first step, change the housekeeping power supply as all else looked good. (Virtual Scope shows ripple is much smaller now.)	Housekeeping Power Supply	Replaced
2-Dec	Start-Up	bi4-qf3	Turn on tripped on error, Setpoint not steady, tapping of setpoint relay on the current regulator card proved relay to be unstable.	Current Reg Card	Replaced Card
3-Dec	Start-Up	bi4-qf3	When the on command is sent, the contactor closes but the control card never gets the on status, after the 4 second time out, the supply trips on error fault.	Auxiliary set of contacts	Replaced
8-Jan	Recover from Maint-Day	bi4-qf7	ESI Fault, unable to operate. Replaced the Housekeeping power supply due to a faulty security relay (RLY401) that clears the ESI fault.	Housekeeping Power Supply	Replaced.
20-Feb	Maint-Day	bi4-qf7	Current Reg Card (type 4), Iref does not match the wfg, found the K2 relay, the original installed to be faulty.	Current Reg Card	Replaced Card
1-Feb	21:25:30	bi5-qf1	PS error bi5-qf1- >:< refCurrentDiff -4.030 Amps >6b-ps3.A0.0:diffRefCurrentM >:< range error > 22:12:59: comment by ganetis... There seems to be a problem with bi5-qf1-ps. If problem continues contact D. Bruno. Looks like problem with current regulator card.	Unexplained	Monitoring

## Dynapower Power Supply Summary Report

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6-May	14:29:32	bi5-qf9	Housekeeping power supply failed. Upon Our own observation, Cryo is working in the building and has the Main Roll-up Door wide open. It had been raining this day and it was very damp and humid in the building. This supply is located close to the roll-up door.	Housekeeping Power Supply	Replaced
9-Dec	Start-Up	bi9-dhx	Tripped the QL twice, suspect the ZFCT card	ZFCT Card	Replaced Card
10-Dec	Start-Up	bi9-dhx	Still causing a QL, replaced the housekeeping power supply and checked all the connections on the backplane of the 3U chassis. Found two Molex connectors had loose pins seated. One into pin 2 of J438 & one into pin 4 of J436. Note: pins 3 & 4 of J438, share the +5v @ 8amps to the backplane.	Housekeeping Power Supply	Replaced
6-Feb	Maint-Day	bi9-dhx	Top roof rear air cooling fan not working	Air cooling fan.	Replaced Fan
24-Mar	Maint-Day	bi9-qd6	When recovering from power off state (breakers locked out) the supply in standby at random by pushing the reset button waiting for the ZFCT to clear, the supply would try to turn ON. Later at the shop, the "ON Switch" on the control card was the fault.	Control Card	Replaced
10-Apr	16:57:39	bi9-qf3	discovered a problem with bi9-qf3-ps: it is ON, but it should have 20 A at injection and it is at zero. It was found	Current Reg Card	Replaced
1-Dec	Start-Up	bi9-qf7	Had a High Error, Current Reg Card Readings Before: wfg=2A, setpoint=2.06A, current=1.65A, error= -323mV. After Card was replaced: wfg=2A, setpoint=2.06A, current=1.99A and the error= -43mV.	Current Reg Card	Replaced Card
20-Feb	Maint-Day	bi9-qf7	High Error signal, Type 4 current reg card. Found one of the jumpers located on the time constant board to be in the wrong location (E7 to E8 when it should have been in E6 to E7)	High Error Signal	Repaired.
3-Apr	7:30:16	bi9-qf7	Pulled Tape (Quench Recovery Program). Postmortem indicates that the Current (near zero amps) did not follow the Iref (ramping past 7amps) causing the Error signal to go below threshold of 5volts for more then 4sec, tripping the supply on error fault. (Possible Fiber Optics Card)	Unexplained	Reset Okay
18-Dec	2:10:50	bo10-dh0	dmmSetpoint did not follow the dmmDAC, tripping the supply. Both K1 and K2 relays found to be at fault on the current card, they were replaced.	Current Reg Card	Replaced Card
1-Dec	Start-Up	Bo10-dhx	Had a 4mV offset between the DAC out & Analog out on the fiber optic interface card. Before:(wfg=4A, f.o. card dac out=4.06A (20.3mV), f.o.analog out = 3.22A (16.1mV) After card was replaced: (wfg=4A, f.o. dac out = 4.08A (20.4mV), f.o. card analog out = 4.0A (20.0mV).	Fiber Optics Card	Replaced Card
26-Dec	Maint-day	bo10-dhx	Tripped off. Cycled the unit by going to the off state then back to standby. Possible auxiliary contactor going bad.		
1-Dec	Start-Up	Bo10-qd7	Unusual noise, humming sound. Measurements taken, found no problems.		
8-Dec	Start-Up	bo11-qd1	Power supply appears too noisy.		
18-Dec	Maint-Day	bo11-qd1	Replaced the 3 channel isolation board due to noise on the ramps. (Ref to Dec of the 2001 Dynapower power supply summary reports)	3 channel isolation board	Replaced Board
2-Dec	Start-Up	bo11-qd3	Possible sticking contactor.		
3-Dec	Start-Up	bo11-qd3	When the on command is sent, the contactor closes but the control card never gets the on status, after the 4 second time out, the supply trips on error fault.	Auxiliary set of contacts	Replaced
3-Feb	22:15:43	bo11-qf8	The buffer card is missing the -15V. This card sends the p.s. readbacks to the MADC's so none of them are right. The p.s. is regulating fine. CAS did some measurements for me from the current regulator card. I spoke with Sanjee and he said to hold off on changing the buffer card until tomorrow morning since the p.s. is regulating.	Buffer Card (see 4-Feb)	Waiting for permission to bring down the link and replace the card.
4-Feb	13:40:16	bo11-qf8	Buffer card (Ref to 3-Feb 22:15:43) The C50 capacitor (10uf @22v) was found to be shorted.	Buffer Card	Replaced Card
13-May	7:57:04	bo2-qd1	Power supply shows an AC phase fault when there is a QLI. To be looked at when time permits because this appears not to be real.	AC Phase Fault	To be looked into.
3-Dec	Start-Up	bo3-qd3	When the on command is sent, the contactor closes but the control card never gets the on status, after the 4 second time out, the supply trips on error fault.	Auxiliary set of contacts	Replaced
1-May	Maint-Day	bo3-qd3	Fiber Optics Interface Card changed.	Fiber Optics Card	Replaced
2-Dec	Start-Up	bo3-qf6	Tripped on turn on, cycled now working okay, possible contactor sticking.		
3-Dec	Start-Up	bo3-qf6	When the on command is sent, the contactor closes but the control card never gets the on status, after the 4 second time out, the supply trips on error fault.	Auxiliary set of contacts	Replaced
2-Dec	Start-Up	bo6-qf8		D Connector	Repaired.

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13-Mar	1:45:22	bo7-qd1	Iref dropped to zero at -0.186sec, bringing down the blue ring quench link, 8b-ps1.		Reset
13-Mar	8:00:43	bo7-qd1	Iref dropped to zero at -0.19sec, bringing down the blue ring quench link, 8b-ps1. Replaced the current reg card and after shop test letting the card run for awhile that the K-2 Relay became questionably unstable and was replaced.	Current Reg Card	Replaced Card
6-Feb	Maint-Day	b-qtrim	Top roof large rear fan closest to the back not working		
19-Feb	Maint-Day	b-qtrim	Replaced fan ( <a href="#">Ref to 6-Feb, Maint-Day</a> )	Air cooling fan.	Replaced Fan
8-Mar	10:59:20	y12-dh0			
12-Mar	8:59:48	y12-dh0	Running at 50.36amps, the Iref dropped to zero at -0.013sec. Later during maintenance, the housekeeping power supply was checked for connections, found the 120vac molex connector to be a little loose, tightened spring contacts. Supply bw as eventually replaced.		
12-Mar	Maint-Day	y12-dh0	( <a href="#">Ref to 8-Mar</a> ) the Housekeeping power supply.	Housekeeping Power Supply	Replaced
17-Mar	11:00:56	y12-dh0	(Ref to 12-Mar) Found nothing unusual so performed a Vibe test, nothing loose. Checked all connections to the Node card, and 3U bucket, replaced the 3U backplane and digital IO card.	Unexplained	Running
27-May	Maint-Day	y12-q6	Y12-q6-ps fiber optic card, swapped it out with a spare and let Phil Pape take a look at it. Al saw something he did not like-it says it is a single channel instead of a dual channel. ( <a href="#">Turns out that the fiber optics card had the wrong software installed, it was corrected</a> )	fiber optic card, wrong software.	Replaced
6-Feb	Maint-Day	y12-q7	Top roof rear air cooling fan not working		
26-Feb	Maint-Day	y12-q7	Replaced fan ( <a href="#">Ref to 6-Feb</a> )	Air cooling fan.	Replaced Fan
17-Dec	13:38:07	y2-dh0	After running for sometime, there is an offset in the fiber optics card (DAC out). Shutting down the card, waiting a few moments before powering back up, seems to solve the problem. Will need to look into further to have a better understanding.		
2-Jan	Maint-Day	y2-dh0	Continuing Fiber Optics card offset problem ( <a href="#">Ref to 17-Dec</a> ). Removed 3U bucket and soldered the J6 & J8 press-fitted backplane connections. Replaced locking hardware on all "D" connectors.		
8-Jan	Maint-Day	y2-dh0	Changed the older style 3U backplane with a new one (fused), also changed the hardware on the "D" connectors to the backplane board.	3U Backplane	Replaced
19-Dec	23:46:08	y6-dh0	23:58:43: comment by jak... The yellow QLI was caused by a large voltage spike for the y6-dh0 supply (the supply appears to rail at 10,000 mV.) Check housekeeping supply for loose connections, found none.		
20-Dec		y6-dh0	Inspected the housekeeping power supply for possible loose connections.		
9-Mar	15:03:08	y6-dh0	While running at 479amps, the voltage is seen oscillating and then spikes to the max of +10.0volts causing a crowbar fault.		
12-Mar	Maint-Day	y6-dh0	Tripped to the Off state, voltage was oscillating and then took of to the rail. (Ref to 19-Dec 2002 and 9-Mar 2003), possible housekeeping power supply.	Housekeeping Power Supply	Replaced
28-Jan	12:17:56	y6-q6	Quench detector 6b-qd2 tripped because of a large spike on the current signal for y6-q6-ps. The other p.s. signals do not show this spike. ( voltage, error, etc. ) The buffer card was replaced and nothing found wrong at the shop..	Buffer Card.	Replaced Card
6-Feb	Maint-Day	y8-q7	Top roof front left small fan not working.		
19-Feb	Maint-Day	y8-q7	Replaced fan ( <a href="#">Ref to 6-Feb, Maint-Day</a> ), Fuse FU-6 blew as fan wires in the housekeeping ps area were looses and touching, repaired.	Air cooling fan.	Replaced Fan
26-Dec	Maint-Day	yi10-dh0	Placed the fiber optics card from yo9-dh0 for monitoring purposes to compare data with the yo9-dh0 ongoing offset at low current readings. ( <a href="#">Ref to 26-Dec</a> )		
8-Jan	Maint-Day	yi10-dh0	( <a href="#">Ref to 26-Dec</a> ) on the backplane "D" connectors, found the AGND socket to the fiber optics card loose where the ground is used for the high precision readbacks card (pinched connector closed).	3U Backplane	Replaced
8-Jan	Recover from Maint-Day	yi10-qf3	Error trip on turn on, signal from the auxiliary contactor that tells the control card that the main contactor is energized not there. (Auxiliary contactor cotnacts failed)	Auxiliary set of contacts	Replaced.
11-Dec	Start-Up	yi10-qf7	All MADC readbacks not responding. At 5amps = 0.83v output of the fiber optics card but no setpoint to the current regulator card, tapping on the front of the current reg card, the setpoint and all readbacks were readable. Bad setpoint relay K2 on the card.	Current Reg Card	Replaced Card

## Dynapower Power Supply Summary Report

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8-Dec	Start-Up	yi2-qi1	Error fault on turn on, able to clear.		
9-Dec	Start-Up	yi3-qi1	Error signal, unable to turn ON remotely or locally. Problem with the housekeeping power supply, relay 401 on the main board found to be bad.	Housekeeping Power Supply	Replaced
22-Dec	5:43:52	yi3-qi9	Failed to turn after a quench event pulled down the link. Cycled and came back on.		
26-Dec	Maint-Day	yi3-qi9	Replaced the auxiliary set of contacts. ( <a href="#">Ref to 22-Dec</a> )	Auxiliary set of contacts	Replaced
8-Jan	Maint-Day	yi6-qi1	During a quench event on January 04, 2003 at 21:22:24, after the supply had tripped off, the Iref remained at setpoint. Found the jumper on the current reg card was in 6-7 when it should have been in 5-6. (Repaired)	Iref Jumper	Repaired.
12-Dec	18:54:07	yi7-qi1	Error on turn ON, auxiliary set of contacts not sending the main contactor closed signal to the control card, timing out after 4seconds.	Auxiliary set of contacts	Replaced
7-May	3:05:20	yi7-qi3	Housekeeping power supply failed. It had been raining the day before and at night it was foggy and damp, probable cause of this failure.	Housekeeping Power Supply	Replaced
16-Dec	Start-Up	yo1-qi3	Yellow standby light on the front of the power supply flickers.		
2-Jan	Maint-Day	yo1-qi3	Standby Light flickering, replaced with a new one.	Standby Light Faulty	Replaced
13-Dec	10:22:28	yo4-qi1	AC phase fault, possible firing circuit board loss of phase lock or a loose connection internally as these circuits were modified during the summer shutdown of 2002. Was able to clear.		Monitoring
12-Mar	Maint-Day	yo4-qi3	High Error signal, (-760mV) Type 2 current reg card replaced along with a new Time Constant board. Shop testing showed the K-2 Relay questionably unstable so it was replaced.	Current Reg Card	Replaced Card
16-Apr	Maint-Day	yo4-qi7	Faulty cooling fan found internally during Routine Inspection located in the rear DC compartment. This did not cause the supply to fault but was replaced as general maintenance.	Cooling Fan Fault	Replaced
11-Dec	Start-Up	yo4-qi6	disconnected.	Loose connection	Repaired.
13-Dec	15:20:07	yo8-dh0	Offset found, power supply was -3.5amps from what it should be. Found the fiber optics card had the wrong jumper settings. J11 should have been left out and J12 should have been in place. Found that these two were the opposite.	Fiber Optics Card, jumpers	Repaired.
9-Dec	Start-Up	yo8-qi8	Error fault on Turn ON, J421 and J412 loose Molex connections. Replaced pins 7 & 8 of J412. Removed, re-bent springs then reseated J421. Solved the problem.	Molex Connection (4)	Repaired.
11-Dec	Start-Up	yo9-dh0	Setpoint in doesn't match the setpoint to the power supply. Fiber optics card Analog Out = 0.022v, DAC Out = 0.025v, Current reg card setpoint = 0.022v, then found the Analog out changed to 0.012v causing the setpoint at the current reg card to follow to 0.012v while the DAC out remained at 0.025v. Fiber optics card found to be bad. Also found DMM Readbacks not working, (software)	Fiber Optics Card	Replaced
12-Dec	Start-Up	yo9-dh0	<a href="#">REF to Dec 11</a> , offset within the fiber optics card. Possible Housekeeping Power Supply beginning to fail.		
19-Dec	18:04:02	yo9-dh0	18:04:02: comment by TJS... yo9-dh0 stops regulating at low currents again. 18:18:50: comment by Johannes... Don't know if it will make a big difference, but George says we should look at the dmmCurrent signal, for the real measured current. (A special fiber optics card was built to monitor signals)		
20-Dec	13:50:20	yo9-dh0	Swapped original fiber optics card with one containing many test points for monitoring of the fiber optics circuits to locate the possible fault causing the offset in current at the low running currents.		
26-Dec	Maint-Day	yo9-dh0	On going problem ( <a href="#">Ref to 19-Dec</a> ), replaced the 3U chassis backplane board, soldering the fiber optics and current reg card press fitted connector pins, changed the hardware to the "D" connectors to the backplane board and placed an updated fiber optics card containing additional test points for monitoring purposes. Also replaced the current reg card and time constant board.		
6-Feb	Maint-Day	yo9-dh0	Top roof small fan failed, cycled AC power sn pushed it past the stall point. It works now!	Air cooling fan.	Cycled
6-Feb	Maint-Day	yo9-dh0	Replaced current reg card, found relays to be bad after some extensive testing.	Current Reg Card	Replaced Card
6-Feb	Maint-Day	yo9-dh0	J110 to HKPS-J439 {+24v/-24v} and 3U-J109 to HKPS-plugJ120 {+5v}	Possible bad harness	Replaced
19-Feb	Maint-Day	yo9-dh0	Replaced fan ( <a href="#">Ref to 6-Feb, Maint-Day</a> )	Air cooling fan.	Replaced Fan
19-Feb	Maint-Day	yo9-qi7	Replaced fan ( <a href="#">Ref to 6-Feb, Maint-Day</a> )	Air cooling fan.	Replaced Fan
9-Dec	Start-Up	yo9-qi6	Possible dirty auxiliary contactor contacts that supply the control card with the main contactor closed signal.	Auxiliary set of contacts	Replaced

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16-Apr	Maint-Day	y-qtrim	Faulty cooling fan found internally during Routine Inspection located in the rear DC compartment. This did not cause the supply to fault but was replaced as general maintenance.	Cooling Fan Fault	Repalced
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### Gamma-T Power Supply Summary Report

RHIC Physics 2002-2003

Date	Time	Supply	Alcove	Analysis	Fault	Status
26-Feb	Maint-day	AC Connections		Chassis to the 3U Chassis in Alcoves 1A, 1C, 3A, 5A, 5C, 9C, 11A and 11C. (Not checked: 3C, 7A, 7C and 9A) This was done do to the many unexplained Off trips.	Loose AC connections	None Found
29-Jan	Maint-day	bi12-qgt	1A	Routine Maintenance, same as: (Ref to 29-Jan Maint-day bi1-qgt)	Fuses loose	Repaired
17-Jan	18:45:23	bi1-qgt	1C	Tripped to off		
18-Jan	9:11:27	bi1-qgt	1C	Tripped to off		
23-Jan	0:50:26	bi1-qgt	1C	Tripped off at idle current of -0.941amps, was able to bring back on.		
29-Jan	Maint-day	bi1-qgt	1C	fuses, check for connections and re-test with a positive and negative jump.	Fuses loose	Repaired
3-Feb	11:48:34	bi1-qgt	1C	Tripped to off while idle at +1.53amps.		
5-Feb	12:34:12	bi1-qgt	1C	Ramping down, tripped to off at -0.38amps of power.		
19-Feb	Maint-day	bi1-qgt	1C	chassis and re-seated Isolation Buffer board of power chassis. Caps began to charge once again.}	Possible fuse holders	soldered wire in place
15-Jan	Maint-day	bi4-qgt	5A	gamma-t power supplies.	Fuses loose	Repaired.
26-Jan	3:19:38	bi4-qgt	5A	Tripped to off.		
29-Jan	Maint-day	bi4-qgt	5A	re-test with a positive and negative jump.	Fuses loose	soldered wire in place
3-Dec	Start-up	bi5-qgt	5C	Found to be in the OFF state, no explanation at this time		
9-Dec	Start-up	bi5-qgt	5C	MADC indicates all negative readbacks. Cap voltage is negative which should always be on. Buffer card +15V2 shorted (C66 of setpoint line shorted)	Buffer card	Replaced
22-Jan	1:27:09	bi5-qgt	5C	Tripped off at idle current of -0.941amps, was able to bring back on.		
23-Jan	15:18:08	bi5-qgt	5C	Tripped to Off, running at +1.53amps.		
29-Jan	Maint-day	bi5-qgt	5C	Routine Maintenance, same as: (Ref to 29-Jan Maint-day bi1-qgt)	Fuses loose	Repaired
20-Feb	18:48:55	bi5-qgt	5C	Tripped to OFF state while running idle at -0.95amps.		
21-Feb	7:14:01	bi5-qgt	5C	Tripped to OFF state while running idle at -0.95amps.		
26-Feb	Maint-day	bi5-qgt	5C	place.	Possible fuse holders	soldered wire in place
29-Jan	Maint-day	bi8-qgt	9A	Routine Maintenance, same as: (Ref to 29-Jan Maint-day bi1-qgt)	Fuses loose	Repaired
29-Jan	Maint-day	bi9-qgt	9C	Routine Maintenance, same as: (Ref to 29-Jan Maint-day bi1-qgt)	Fuses loose	Repaired
11-Dec	10:05:53	bo10-qgt	11A	Physics Logs: 10:05:53 The gamma_t polarity check in BLUE showed a backwards quadrupole start ramping with gamma_ts!!! (Swapped DC output cables at the rear of the p.s. and relabeled.)	Polarity reversed.	Changed
11-Dec	17:00:00	bo10-qgt	11A	magnet trees, (Q12= +0.017v, Q14= -0.021v, Q16= +0.015v & Q18= +0.020v. The power supply output = 1.093v) Magnet polarity at Q14 was reversed so it was corrected.	Polarity reversed.	Corrected
18-Dec	Maint-day	bo10-qgt	11A	supply locally when measuring the polarities at the magnets (Ref Dec-11) Replaced switch not be repeated.	Control Card	Repaired.
17-Jan	4:18:56	bo10-qgt	11A	Tripped to off		

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19-Jan	0:46:27	bo10-qgt	11A	Tripped off while a store. (MCR-Physics)		
20-Jan	5:36:09	bo10-qgt	11A	Tripped to off		
22-Jan	14:16:06	bo10-qgt	11A	Tripped to off		
29-Jan	Maint-day	bo10-qgt	11A	Routine Maintenance, same as: ( <a href="#">Ref to 29-Jan Maint-day bi1-qgt</a> )	Fuses loose	Repaired
31-Jan	13:53:02	bo10-qgt	11A	Tripped to off.		
1-Feb	15:01:10	bo10-qgt	11A	Tripped to off.		
3-Feb	11:36:27	bo10-qgt	11A	Tripped to the Off state, running at -1.53amps.		
3-Feb	multiple	bo10-qgt	11A	Tripped to off twice while idle at +1.53amps.		
6-Feb	12:12:38	bo10-qgt	11A	Tripped to OFF while running at +0.06amps.		
8-Feb	2:56:28	bo10-qgt	11A	Tripped to off while idle at -1.53amps.		
10-Feb	9:32:26	bo10-qgt	11A	Tripped to off while idle at -1.53amps.		
19-Feb	Maint-day	bo10-qgt	11A	place.	Possible fuse holders	<a href="#">soldered wire in place</a>
22-Dec	16:57:40	bo11-qgt	11C	Found to be in the OFF state, no explanation at this time		
12-Jan	15:37:16	bo11-qgt	11C	bo11-qgt-ps tripped to off at store.		
15-Jan	Maint-day	bo11-qgt	11C	Found loose copper fuse slugs on the housekeeping power supply. Removed, compressed fuse sockets then re-installed slugs for now. ( <a href="#">Ref 22-Dec &amp; 12-Jan</a> )		Repaired.
29-Jan	Maint-day	bo11-qgt	11C	Routine Maintenance, same as: ( <a href="#">Ref to 29-Jan Maint-day bi1-qgt</a> )	Fuses loose	Repaired
31-Dec	7:14:00	bo2-qgt	3A	Tripped off during a store. (MCR-Physics)		
15-Jan	Maint-day	bo2-qgt	3A	Found loose copper fuse slugs on the housekeeping power supply. Removed, compressed fuse sockets then re-installed slugs for now. ( <a href="#">Ref 31-Dec</a> )		
29-Jan	Maint-day	bo2-qgt	3A	Routine Maintenance, same as: ( <a href="#">Ref to 29-Jan Maint-day bi1-qgt</a> )	Fuses loose	Repaired
3-Dec	Start-up	bo3-qgt	3C	loose.	Current Reg Card	Repaired.
30-Dec	18:08:27	bo3-qgt	3C	Tripped to the off state (MCR-Physics)		
9-Jan	15:17:12	bo3-qgt	3C	to standby, problem went away.		
10-Jan	10:26:34	bo3-qgt	3C	comment by AD&CM... gammaT quad bo3-qgt was found OFF at flattop in this store (2702). since 06:21 this morning. Angelika		
10-Jan	12:00:47	bo3-qgt	3C	<del>10:26:34</del> comment by AD&CM... gammaT quad bo3-qgt was found OFF at flattop in this store timestamp says it's off since 06:21 this morning. Angelika		
15-Jan	Maint-day	bo3-qgt	3C	Found loose copper fuse slugs on the housekeeping power supply. Removed, compressed fuse sockets then re-installed slugs for now. ( <a href="#">Ref 30-Dec, 9-Jan &amp; 10-Jan</a> )		Repaired.
29-Jan	Maint-day	bo3-qgt	3C	Routine Maintenance, same as: ( <a href="#">Ref to 29-Jan Maint-day bi1-qgt</a> )	Fuses loose	Repaired
15-Jan	Maint-day	bo6-qgt	7A	gamma-t power supplies.	Routine Maintenance	Repaired.
29-Jan	Maint-day	bo6-qgt	7A	Routine Maintenance, same as: ( <a href="#">Ref to 29-Jan Maint-day bi1-qgt</a> )	Fuses loose	Repaired
29-Jan	Maint-day	bo7-qgt	7C	Routine Maintenance, same as: ( <a href="#">Ref to 29-Jan Maint-day bi1-qgt</a> )	Fuses loose	Repaired
29-Jan	Maint-day	Spare	Shop	looses AC fuse clips, remove copper fuse slugs and solder wire in place. ( <a href="#">This is okay as the real fuse protection has been relocated to the rear of the 3U control chassis</a> ).	Possible fuse holders	<a href="#">soldered wire in place</a>
18-Jan	0:32:00	yi10-qgt	11A	Tripped off while a store. (MCR-Physics)		
22-Jan	1:57:00	yi10-qgt	11A	Tripped off at idle current of -1.13amps, was able to bring back on.		
23-Jan	19:21:34	yi10-qgt	11A	Tripped to Off, running at +1.87amps.		
27-Jan	3:17:26	yi10-qgt	11A	Tripped to off.		
29-Jan	Maint-day	yi10-qgt	11A	Routine Maintenance, same as: ( <a href="#">Ref to 29-Jan Maint-day bi1-qgt</a> )	Fuses loose	Repaired

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19-Feb	Maint-day	yi10-qgt	11A	place.	Possible fuse holders	<a href="#">soldered wire in place</a>
10-Dec	Start-up	yi11-qgt	11C	to be open circuit at CQS-245, Y111-Q13 splice connection at the magnet tree.	Magnet string disconnected.	Repaired.
2-Jan	Maint-day	yi11-qgt	11C	suspected of the cause. Card was tested in the shop and nothing was found wrong.	Control Card	Card checked out good
15-Jan	Maint-day	yi11-qgt	11C	Found loose copper fuse slugs on the housekeeping power supply. Removed, compressed fuse sockets then re-installed slugs for now. <a href="#">(Ref 2-Jan)</a>	Fuses loose	Repaired.
29-Jan	Maint-day	yi11-qgt	11C	Routine Maintenance, same as: <a href="#">(Ref to 29-Jan Maint-day bi1-qgt)</a>	Fuses loose	Repaired
17-Mar	5:41:07	yi11-qgt	11C	not solve the problem. R. Lee reloaded the MADC software and we haven't seen any more troubles with this supply.	Software, re-boot of cfe-ps1 and cfe-ps2 not responding	Repaired
10-Dec	Start-up	yi2-qgt	3A	voltage was set to. (replaced microprocessor and re-calibrated the card.)	Jump Card	Replaced
29-Jan	Maint-day	yi2-qgt	3A	Routine Maintenance, same as: <a href="#">(Ref to 29-Jan Maint-day bi1-qgt)</a>	Fuses loose	Repaired
16-Dec	15:48:58	yi3-qgt	3C	tripped the power supply. Exersing the supply several times, found nothing wrong.	MCR mis-fired	No action required.
15-Jan	Maint-day	yi3-qgt	3C	Found loose copper fuse slugs on the housekeeping power supply. Removed, compressed fuse sockets then re-installed slugs for now.		Repaired.
29-Jan	Maint-day	yi3-qgt	3C	Routine Maintenance, same as: <a href="#">(Ref to 29-Jan Maint-day bi1-qgt)</a>	Fuses loose	Repaired
30-Dec	20:40:18	yi6-qgt	7A	Tripped to the off state twice. (MCR-Physics)		
15-Jan	Maint-day	yi6-qgt	7A	gamma-t power supplies.		Repaired.
29-Jan	Maint-day	yi6-qgt	7A	Routine Maintenance, same as: <a href="#">(Ref to 29-Jan Maint-day bi1-qgt)</a>	Fuses loose	Repaired
29-Jan	Maint-day	yi7-qgt	7C	Routine Maintenance, same as: <a href="#">(Ref to 29-Jan Maint-day bi1-qgt)</a>	Fuses loose	Repaired
17-Feb	17:44:36	yi7-qgt	7C		7c-ps2 not responding	Reset
11-Jan	0:40:00	yo12-qgt	1A	yo12-qgt tripped after the ramp was completed.		
12-Jan	6:10:27	yo12-qgt	1A	yo12-qgt-ps tripped to off at injection		
12-Jan	17:27:09	yo12-qgt	1A	yo12-qgt-ps tripped during store.		
15-Jan	Maint-day	yo12-qgt	1A	Found loose copper fuse slugs on the housekeeping power supply. Removed, compressed fuse sockets then re-installed slugs for now. <a href="#">(Ref 11-Jan &amp; 12-Jan)</a>		Repaired.
29-Jan	Maint-day	yo12-qgt	1A	Routine Maintenance, same as: <a href="#">(Ref to 29-Jan Maint-day bi1-qgt)</a>	Fuses loose	Repaired
8-Feb	17:15:18	yo12-qgt	1A	Tripped to off while idle at -1.01amps.		
9-Feb	multiple	yo12-qgt	1A	Tripped to off three times while running idle at +1.84amps, -0.10amps and -1.01amps.		
10-Feb	2:00:14	yo12-qgt	1A	Tripped to off while idle at +1.84amps.		
11-Feb	multiple	yo12-qgt	1A	Tripped to Off several times, idle current.		
12-Feb	multiple	yo12-qgt	1A	Tripped to Off several times, idle current.		
14-Feb	19:45:20	yo12-qgt	1A	at the same time. (Running idle at +1.84amps)		
19-Feb	Maint-day	yo12-qgt	1A	place.	Possible fuse holders	<a href="#">soldered wire in place</a>

### Gamma-T Power Supply Summary Report

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19-Mar	1:22:25	yo12-qgt	1A	Buffer Card as this has been the cause in the past.	Crowbar, Groun Fault	Replaced 6U Iso Buffer Card
25-Jan	23:10:00	yo1-qgt	1C	yo1-qgt-ps has tripped off. Phobos' chipmunk rates went up when it was attempted to be brought back on to setpoint. It is back at zero until the next ramp .		
29-Jan	20:00:07	yo1-qgt	1C	1) Readbacks not working properly, found MADC cables pulled out of the 25pin Female "D" connector end on the 3U bucket. One wire stretched and broken. Repaired for the run but crowbar fault).	MADC and J30 "D" Connectors	Temp repaired, need more time to replace connectors (Done: 19-Feb Maint-day)
29-Jan	Maint-day	yo1-qgt	1C	Routine Maintenance, same as: ( <a href="#">Ref to 29-Jan Maint-day bi1-qgt</a> )	Fuses loose	Repaired
19-Feb	Maint-day	yo1-qgt	1C	at 20:00:07)	MADC and J30 "D" Connectors	Replaced Connectors
10-Jan	21:00:00	yo4-qgt	5A	When turned ON, the high voltage cap bank would charge past voltage setting causing the the problem. Possible cause in the jump card microprocessor.	Unknown	Running Okay
15-Jan	Maint-day	yo4-qgt	5A	gamma-t power supplies.		Repaired.
29-Jan	Maint-day	yo4-qgt	5A	re-test with a positive and negative jump.	Possible fuse holders	<a href="#">soldered wire in place</a>
29-Jan	Maint-day	yo5-qgt	5C	Routine Maintenance, same as: ( <a href="#">Ref to 29-Jan Maint-day bi1-qgt</a> )		Repaired
29-Jan	Maint-day	yo8-qgt	9A	Routine Maintenance, same as: ( <a href="#">Ref to 29-Jan Maint-day bi1-qgt</a> )		Repaired
10-Jan	21:36:41	yo9-qgt	9C	and start was performed for those MADC's and now everything appears to be okay.	MADC's for group A0 in Alcove 9C, Stuck.	Reset
29-Jan	Maint-day	yo9-qgt	9C	Routine Maintenance, same as: ( <a href="#">Ref to 29-Jan Maint-day bi1-qgt</a> )		Repaired

**150 amp tq Suncraft Power Supply Summary Report**

RHIC Physics 2002-2003

Date	Time	Supply	S/N	Analysis	Fault	Status
22-Dec	22:01:10	bi12-tq4		Error message when recovering from a quench event, able to reset.	Error message	Reset
13-Jan	0:40:00	bi12-tq6				
15-Jan	Maint-day	bi12-tq6			Node card cable	Replaced Cable
17-Jan	1:34:10	bi12-tq6		Alarm Display indicated Quench, ESI fault. (Ref to 15-Jan Maint-day)		
18-Jan	20:54:00	bi12-tq6		operating normally otherwise.		
20-Jan	15:15:00	bi12-tq6		tripped off. Alarm disappeared after few minutes.		
27-Jan	10:00:07	bi12-tq6	1	(Ref to 20, 18, 17-Jan) ESI fault indicated while supply would run fine. This time, MCR claimed they could not reset the quench link and since we waited for Cryo, time allowed for the supply to were was replaced, IGBT was also replaced as well as a snubber circuit was added.	ESI (Internal to supply)	Replaced PS
30-Jan	Maint-day	bi12-tq6	96	back into spares (Ref to 16-Dec, yi2-tq4). Swapped out again because this time it would error fault on turn on.		Replaced PS
17-May	2:00:00	bi4-tq4	79	the power supply, the fiber optic interface card, and the QPA, bi4-tq4 stil would fail on crowbar. A third current reg card and the supply is working. Don has tested the supply. (From the shop:	Current Reg Card	Replaced PS and more
5-Mar	Maint-day	bi4-tq5	78	pulled for repair. (Techs noted that supply was very dirty inside)	Fan Failure	Replaced PS
15-Dec	1:58:00	bi8-tq4	88	ribbon cable inside the supply to the 3U chassis, broken. Replaced the IGBT and added snubber circuit.	"D" Connector to ribbon cable broken	Replaced PS
16-Apr	Maint-day	bi8-tq4		shop, the original card tested good. Error signal not properly responding.		
22-Apr	13:39:07	bi8-tq4		Low error signal. (Ref to 16-Apr) Found J-15 of the MADC patch panel not properly seated.	J-15 lemo connector not properly seated at MADC patch panel	Repaired
24-Apr	8:19:02	bi8-tq5			Remained at zero current	Cycled
12-Dec	8:00:07	bi9-tq5		Supply tripped indicating a fuse fault problem within the tqOn script, failing.	tqOn script Failed (Software)	Corrected

**150 amp tq Suncraft Power Supply Summary Report**

RHIC Physics 2002-2003

24-May	17:45:00	bo10-tq6		Difficulty to bring back on after a Blue Quench Event. <a href="#">20:00:00 Comment by Don</a> : bo10-tq6-ps would trip to a Quench fault every time we would try to reset the quench detector to bring up the detector is reset. I also turned the p.s. ON and ran it at 1 amp. I brought the blue tq link back down in 1010A after we were done.	Control Card	Replaced
26-Mar	16:19:53	bo3-tq6		Tripped wfgRefRangeError, Quench, FET Fault. MCR was able to recover.	FET Fault	Recovered
19-Feb	Maint-day	bo7-tq4		unstable. (K2 relay was the fault)	Current Reg Card	Replaced Card
13-Dec	18:10:50	bo7-tq5		<b>18:10:50:</b> done now.		
8-Jan	Recover from Maint-Day	yi10-tq5		Iref not getting through, the Local/Remote switch failed internally thinking the supply was in local spike upwards.	Current Reg Card	Repaired
21-Mar	10:31:52	yi10-tq5		Tripped to Off with a quench and a FET fault during the time yellow ring was at Injection current. MCR was able to reset remotely.	FET Fault	Reset
11-Dec	Start-up	yi2-tq4		first time.	Control Card	Replaced
16-Dec	Start-up	yi2-tq4	96	Runs for awhile then trips to the OFF state. <a href="#">(REF to Dec 11)</a> . <b>Replaced IGBT and added snubber circuit.</b>	IGBT(1) Replaced	<a href="#">Replaced PS</a>
25-Dec	4:50:57	yi3-tq5		Tripped on Over-current.		Reset
18-Dec	4:30:01	yi6-tq4	16	D512 was replaced as well.	IGBT(6) Replaced	<a href="#">Replaced PS</a>
10-Jan	17:38:31	yi6-tq4	13	replaced. Bench test showed nothing wrong either.		<a href="#">Replaced PS</a>
11-Dec	Start-up	yi6-tq6	31	sockets.	3U Cards not seated properly	Repaired
8-Dec	Start-up	yi7-tq4	28	shorted (reading of 0.5ohms).	IGBT(1) Replaced	<a href="#">Replaced PS</a>
11-Dec	Start-up	yo5-tq5	40	added.	IGBT(1) Replaced	<a href="#">Replaced PS</a>
12-Dec	Start-up	yo5-tq6			No setpoint	Repaired
24-Mar	Maint-day	yo9-tq4	36	Shorted IGBT causing a hard start, cap bank constant charge. <a href="#">Note: The IGBT had been replaced during a mod phase in Sept of 02.</a>	IGBT	<a href="#">Replaced PS</a>
12-Dec	Start-up	yo9-tq6		MADC Lemo was not properly seated.	MADC Readback	Repaired

## 150 amp IR Suncraft Power Supply Summary Report

RHIC Physics 2002-2003

Date	Time	Supply	S/N	Analysis	Fault	Status
20-Dec	16:52:59	bi1-qd2		Snapshot indicated that this supply tripped on a quench.	No Action Taken	Reset
26-Dec	Maint-Day	bi1-qd2		Reseated the control card and the digital isolation card. (Ref to 20-Dec)		Monitoring
29-Apr	1:59:20	yi10-qd2		ps Stby-Error, Local, No PS / Illegal State. Reset okay.		
1-May	Maint-day	yi10-qd2		New Node Card Cable installed due to status that was not real (Ref 29-Apr)	Status Faults not real	Installed new Node Card Cable
27-Dec	17:29:01	yo4-qf2		Possible auxiliary contactor contacts going bad.		Cycled Power
8-Jan	Maint-Day	yo4-qf2		(Ref to 27-Dec) Reseated the control and the digital fiber optics card.		
5-Mar	Maint-Day	yo4-qf2	52	pulled for repair. Also replaced the IGBT and added a snubber circuit.	Fan Failure	Replaced PS
6-Mar	13:07:59	yo4-qf2	88	This supply was put in place of s/n 52 but began to oscillate causing a quench event while the supplies were sitting idle at Injection Currents.	Oscillation	Replaced PS
15-Mar	1:01:19	yo4-qf2				
19-Mar	17:17:44	yo4-qf2		Voltage began to oscillate -0.048sec at 6.74amps then increased greatly, eventually tripping the link.		
19-Mar	18:18:08	yo4-qf2		wrong with the card back at the shop.	Current reg card	Replaced Card
21-Jan	14:07:14	yo9-qf2		Zero current, No Iref getting through, turned out that the current reg card K2 relay failed and had to be replaced.	Current reg card	Replaced Card
23-Feb	12:28:24	yi11-qd2		First sign of trouble, power supply began to oscillate, pulling down the quench link, able to reset.		
23-Feb	23:36:44	yi11-qd2		Starts to oscillate again, pulling down the 12a-ps1.A permit.		
24-Feb	2:14:39	yi11-qd2		Starts oscillating again, CAS swaps out the current reg card, later at the shop, card appears to be good. Possible reseating of new card or DCCT card solved the problem.	Oscillating	Replaced Current Reg Card
25-Feb	1:25:42	yi11-qd2	19		Oscillating	Replaced PS

### 300 amp IR Suncraft Power Supply Summary Report

RHIC Physics 2002-2003

Date	Time	Supply	S/N	Analysis	Fault	Status
26-Feb	Maint-Day	b12-q89		8.63v, Error=-4.5v}	Current reg card	Replaced Card
2-Dec	Start-Up	b4-q89		Front circuit breaker tripped on turn on, reset and works okay now.	circuit breaker, front panel.	reset.
3-Dec	Start-Up	b4-q89	4	Found the two IGBT IC's on the convert card shorted. (Repaired)	IGBT IC (2) Shorted	Replaced P.S.
13-Nov	Start-Up	bo10-qd9	4	power supply was mis-wired, removed and corrected.	Housekeeping Supply Mis-wired	Replaced P.S.
30-Nov	Start-Up	bo10-qd9	16	J106 to backplane of control bucket N.G.	Internal Ribbon Cable	Replaced P.S.
13-Dec	10:22:28	y12-q89			DC Overcurrent	MCR running too close to the edge.
15-Jan	Maint-Day	y2-q89		E7, moved to proper location of E5-E6.	Iref Jumper	Repaired Card
28-Mar	2:40:34	y2-q89		refWfgDiff of 6.056amps. Turns out that the fiber optics card was causing the problem. Yellow beam at injection has now improved. 4/3/03 Card repaired, bad delay line, U18 replaced. Card re-cal and placed back into the spares locker.	Fiber Optics Card	Replaced Card
9-Dec	Start-Up	y4-q89	6	found the two IGBT IC's on the converter card shorted. (Repaired)	IGBT IC (2)	Replaced P.S.
24-Apr	4:10:48	y4-q89		tripped. They reset it but it continued to trip when trying to recover.		
24-Apr	5:04:04	y4-q89	7	(Ref to 24-Apr) Front panel breaker keeps tripping, Tech shop found both IGBT's to be shorted.	IGBT IC (2) Shorted	Replaced PS
25-Dec	15:20:11	y8-q89		16:21:14: comment by ganetis... Error fault on y8-q89-ps. The p.s. was in the on state but it did not follow iref. There was no output voltage either. This p.s. should be watched.	Unexplained	Monitoring
19-May	11:23:12	y8-q89	8	current following. Tested at the shop and the front panel breaker would trip, too much pull on the input side. Team to investigate.	Power supply tripped to Off at the high end.	Replaced PS with s/n 006
8-Jan	Maint-Day	yi10-q89		Controlls group changed the WFG.	Routine Maintenance	Replaced Card
2-Jan	Maint-Day	yi11-q89		Possible communications problem with the fiber optics card. Techs took a look at the unit and found nothing wrong. Possible loose connection?	Fiber Optics Card	Nothing found wrong at this time.
12-Mar	Maint-Day	yo9-qd9		board. Test at the shop proved nothing wrong with the card.	Current Reg Card	Replaced Card
9-Apr	15:13:48	yo9-qd9		Current did not follow Iref, Error signal tracked above the 5volt threshold for more then the 4 second delay and then tripped the supply. (A shorted 3.3uf cap on the time constant board was shorted and repaired)	Current reg card	Replaced Card

**Main Power Supplies Building 1004B Summary Report**

RHIC Physics 2002-2003

Date	Time	Supply	Analysis	Fault	Status
26-Dec	Maint-Day	720Hz Chassis	720Hz chassis would go out of sync, Carl fixed it so it would stay synchronized.	720Hz chassis out of synchronization.	Repaired
1-May	Maint-Day	720Hz Chassis	A new Reference for the 720Hz chassis in 1004B was tied in.		
10-Dec	Start-Up	BMD	Quench caused by PFN Fault (Pulse Forming Network) mistaking fast ramp (Wrong Slow Factor used by MCR) caused a variation in the AC line voltage. A 10uf cap was added to the coil side of the high voltage PFN discharge relay to help prevent this. (This modification was added to all systems)	PFN Fault	Repaired
30-Jan	22:58:52	BMD	<b>Comment by ganetis...</b> We think it is a PFN fault but a change to latch the indication of this fault has not been completed.	PFN	
12-Feb	3:44:40	BMD	Unexplained trip, no faults listed, causing the quench link to come down. ( <a href="#">Ref to 22-Feb</a> )	Unexplained	
14-Feb	16:00:20	BMD	Unexplained trip, no faults listed, causing the quench link to come down. ( <a href="#">Ref to 22-Feb</a> )	Unexplained	
15-Feb	17:40:16	BMD	Unexplained trip, no faults listed, causing the quench link to come down. ( <a href="#">Ref to 22-Feb</a> )	Unexplained	
18-Feb	21:31:48	BMD	Unexplained trip, no faults listed, causing the quench link to come down. ( <a href="#">Ref to 22-Feb</a> )	Unexplained	
19-Feb	1:41:08	BMD	Unexplained trip, no faults listed, causing the quench link to come down. ( <a href="#">Ref to 22-Feb</a> )	Unexplained	
19-Feb	9:32:40	BMD	Unexplained trip, no faults listed, causing the quench link to come down. ( <a href="#">Ref to 22-Feb</a> )	Unexplained	
20-Feb	23:02:48	BMD	Unexplained trip, no faults listed, causing the quench link to come down. ( <a href="#">Ref to 22-Feb</a> )	Unexplained	
21-Feb	0:35:08	BMD	Unexplained trip, no faults listed, causing the quench link to come down. ( <a href="#">Ref to 22-Feb</a> )	Unexplained	
21-Feb	6:13:12	BMD	Unexplained trip, no faults listed, causing the quench link to come down. ( <a href="#">Ref to 22-Feb</a> )	Unexplained	
21-Feb	23:26:48	BMD	Unexplained trip, no faults listed, causing the quench link to come down. ( <a href="#">Ref to 22-Feb</a> )	Unexplained	
22-Feb	2:05:04	BMD	Unexplained trip, no faults listed, causing the quench link to come down. ( <a href="#">Ref to 22-Feb</a> )	Unexplained	
22-Feb	4:44:25	BMD	Unexplained trip, no faults listed, causing the quench link to come down. ( <a href="#">Ref to 22-Feb</a> )	Unexplained	
22-Feb	12:54:20	BMD	<b>13:14:43</b> C. Schulteiss and G. Ganetis have determined that the latest blue main dipole trip was caused by an air flow fault.	Airflow	
22-Feb	22:14:44	BMD	<b>22:38:46</b> Carl reports that the problem is the same airflow fault that appeared earlier today. C. Schulteiss and F. Orsatti came in tonight to diagnose the cause of Blue Main Dipole Flattop power supply airflow faults. The airflow for the power supply was found to be consistent with the other RHIC MMPS's. As a temporary fix, they have jumped out the airflow fault. During the next maintenance period, the differential air vane switch for the power supply will be replaced. <b>Note:</b> This was the cause to all the unexplained trips starting 12-Feb thru 22-Feb. Also, the Airflow Fault was not indicated due to PLC Programming	Airflow, Differential Switch	Jumped Out
28-Feb	11:13:28	BMD	11:54:19: comment by ganetis... The blue quench link trip was caused by 3b-qd1 quench detector. The quench detector tripped because of a blue main dipole voltage oscillations. These large oscillation happened when the current was switching from flattop to ramp power modules.	Switching from Ramping to Flattop	Reset
8-Mar	7:56:52	BMD	<b>09:24:12:</b> comment by ganetis... A problem happened when the p.s. was ramping down from top energy to injection when the current was switching from ramp to flat top power module. The voltage went positive causing the current to increase, this caused the quench detector to trip. If this problem continues, one should contact Carl Schulteiss.	Switching from Ramping to Flattop	Reset
24-Apr	3:40:44	BMD	Oscillating when transitioning from Flattop to Ramp Down Current.	Switching from Ramping to Flattop	Reset
4-May	14:53:32	BMD	15:47:12: comment by ganetis... Both blue and yellow quench link trips were caused by quench detectors. The quench detectors tripped because both blue and yellow main dipole power supplies broke out in oscillations on the down ramp. This is a known problem.	Switching from Ramping to Flattop	Reset
7-May	7:19:44	BMD	Oscillating when transitioning from Flattop to Ramp Down Current.	Switching from Ramping to Flattop	Reset

## Main Power Supplies Building 1004B Summary Report

RHIC Physics 2002-2003

16-May	Maint-Day	BMD	The main contactor was replaced in the Blue Dipole Flattop Power Module. The old contactor was vibrating due to the shading coil popping out of place.	Main Contactor	Replaced
29-May	11:02:32	BMD	Blue Main Dipole Oscillating during transition from Flattop to Ramp down. 12:22:55: comment by jak... The QLI occurred at 1102, as soon as we told Sequencer to go down. Carl Schultheiss investigated and reported that the QLI is due to a known problem when the mains are issued the down ramp.	Switching from Ramping to Flattop	Reset
10-Dec	Start-Up	BMQ	PFN fuse Fault, internal capacitor pressure switch contacts failing and need to be replaced. (For now, temporarily jumped out as per those in command) Unable to get replacements at this time.	PFN Fuse Fault	By-passed
25-Jan	13:25:32	BMQ	14:46:00: contacted and is looking into the matter online. 15:10:00: Carl is coming in to troubleshoot. He found that the auxiliary contactor in the 480vac transformer in the sub-station for the Blue main quad had failed, creating a false indication that the breaker was open. He jumped out this interlock for now.	480vac contactor readback cracked, limiting the distance of travel for the contacts.	Jumpered Out
7-May	2:43:41	BMQ	Unable to recover from a previous quench, Carl was notified and restarted the Processor for the b-qmain	Reg Watchdog Fault.	Reset
22-Dec	9:51:43	YMD	A.C. under-voltage fault, able to clear and start	AC Under-voltage	Reset
4-Feb	17:35:48	YMD	20:06:00: comment by ganetis... Yellow quench link trip was caused by the 5b-qd1 quench detectors. The quench detector tripped because of a voltage dip on the yellow main dipole p.s. 21:32:11: comment by CS... The raw signal Y4DSA4_A3VT is disturbed at -0.134 seconds before the quench, the integrator starts counting at this time. The yellow main dipole shows no disturbances at this time, the voltage dip is at -0.033 seconds before the quench link is pulled. This is only one sample period of the quench detector.	Switching from Ramping to Flattop	Reset
4-Feb	21:15:32	YMD	22:06:39: comment by ganetis... On all quench detectors yellow arc dipole signals there is a real voltage spike about 100 msec before the trip. This is usually a sign of the main dipole p.s. doing something strange. But the p.s. voltage does not show this. I will look for other sources. Wed Feb 5 00:09:23: comment by ganetis... Finally found the cause, it is a sudden change in ground current on the yellow main dipole ckt. This intermittent ground fault started at the yellow quench link trip at 17:35 this evening. This ground fault does not seem to be caused by " ice balls " or even in the cold magnet ckt. Unfortunately to find and fix this problem will still require a significant shutdown.( 8 hours min. )	Ground Current Change	Reset
11-Feb	13:38:36	YMD	14:47:59: comment by ganetis... Yellow quench link trip was caused by main yellow p.s. We do not see the reason for this trip. The beam permit tripped after the yellow quench link. 14:27:08: comment by Jim... Carl did not find a clear cause of the QLI, but he was able to confirm that it came from 4b-time.b and that it probably wasn't a ground fault.	Unknown	Reset
23-Mar	5:59:16	YMD	11:01:29: comment by ganetis... yellow quench link trip was caused by 9b-qd1 quench detector. The quench detector tripped because of a yellow main dipole p.s. current spikes. These p.s. current spikes caused 4 other quench detectors to trip.	Switching from Ramping to Flattop	Reset
24-Apr	3:40:48	YMD	Oscillating when transitioning from Flattop to Ramp Down Current.	Switching from Ramping to Flattop	Reset
29-Apr	2:22:50	YMD	Snapshot revealed a ground current bit set, PS Ground Current Warning.	Gnd Current Warning	Monitoring
4-May	14:53:32	YMD	15:47:12: comment by ganetis... Both blue and yellow quench link trips were caused by quench detectors. The quench detectors tripped because both blue and yellow main dipole power supplies broke out in oscillations on the down ramp. This is a known problem.	Switching from Ramping to Flattop	Reset
17-Dec	12:01:00	YMQ	Two quenches (REF to Dec 17 Quench Records @ 12:01:00 & 13:11:28), the Iref and current began to separate from each other on the up ramp near top energy. This is believed to be caused by a regulation problem within the yellow main quad power supply 720hz chassis. (Frequency locked but not phase lock)	Unknown	

### Main Power Supplies Building 1004B Summary Report

RHIC Physics 2002-2003

16-Jan	23:07:28	YMQ	Fri Jan 17 00:21:34: comment by ganetis... This yellow quench link trip was caused by the quench detector at 2b- qd2. The quench detector tripped because the main quad current had a large glitch on it. You can also see it on the main p.s. voltage.	Switching from Ramping to Flattop	Reset
29-Apr	2:22:55	YMQ	Snapshot revealed a ground current bit set, PS Ground Current Warning.	Gnd Current Warning	Monitoring

**QPA's Summary Report**

RHIC Physics 2002-2003

Date	Time	QPA	S/N	Analysis	Fault	Status
29-Jan	Maint-Day	b12-dhx		SCR driver card fault (100-1137-2) type: 22v, failed.	SCR Driver Card	Replaced Card
20-Feb	Maint-Day	b2-dh0		Tripped with no faults indicated	D Connectors (2)	Changed to new backshell and hardware.
29-Jan	Maint-Day	b4-dh0		Both fan switches failed due to contact contamination causing high resistance build up.	Fan Fault (2 Switches)	Replaced
29-Jan	Maint-Day	b4-dhx		high resistance build up.	Fan Fault (2 Switches)	Replaced
30-Jan	Maint-Day	b6-dhx		SCR driver card fault (100-1137-2) type: 22v, failed. One channel does not fire.	SCR Driver Card	Replaced Card
2-Jan	Maint-Day	b8-dh0		Noticed that when a quench event took place, b8-dh0-qp would indicate a OVC fault. Time permitted to investigate and the Molex connector to the IGBT board was found to be loose.	OVC	Repaired.
27-Dec	16:45:00	b8-q6		sitting for a while.	Fan Fault	Cycled Switches.
2-Jan	Maint-Day	b8-q6		<a href="#">(Ref to 27-Dec)</a> Faulty fan switches reading high resistance.	Fan Fault (3 Switches)	Replaced
30-Apr	8:20:23	bi4-tq4		Alarm page indicated that this qpa faulted (Therm, OVC, Fan faults) However, the Timing Reseolver Page shows no such faults at this time. No one complained about this.	Not Real Faults	To be looked into
1-May	4:15:57	bi4-tq4		no such faults at this time. No one complained about this.	Not Real Faults	To be looked into
1-May	8:44:17	bi4-tq4		Alarm page indicated that this qpa faulted (Therm, OVC, Fan faults) However, the Timing Reseolver Page shows no such faults at this time. No one complained about this.	Not Real Faults	To be looked into
17-May	2:00:00	bi4-tq4	990259	A third current reg card and the supply is working. Don has tested the supply. <a href="#">(Ref to bi4-tq4-ps, May 17 at 02:00:00)</a>	Current Reg Card	In test
26-Feb	16:17:32	bi8-qd2		top of Tech Cabinet in Bldg 1008 incase CAS needs to swap out if we are not here.	Fan Fault (Switches)	Next Maint-Day
5-Mar	Maint-Day	bi8-qd2		was changed.	Fan Fault (2 Switches & 1 Fan)	Replaced
4-Apr	13:56:40	bi9-q89		to reduce the error signal when the unit passes through to zero amps.	error signal spiked near zero amps	Changed Resistor Values across diode pack in series with the load.
27-Dec	18:36:00	bi9-tq5		wires across the internal fuse to be loose. Tighten connections and restored the link.	Fuse Fault	Looses Connections.
28-Dec	8:26:22	bi9-tq5	990216	Tripped once again on the QPA Fuse fault. Yellow wire to the Molex connector on the IGBT board was not properly made. Connector was repaired.	Fuse Fault	QPA Replaced.
30-Jan	Maint-Day	bo10-dhx		SCR driver card fault (100-1137-2) type: 22v, failed. Found blown fuse, replaced card.	SCR Driver Card	Replaced Card
2-Dec	Start-up	bo10-qd3		IGBT would not come on, the plugs were reseated on the card and this fixed the problem.	Loose connection.	Repaired.
30-Jan	21:00:07	bo3-sxf	884803	(Previous modifications)	12 volt transformer not soldered	QPA Replaced.

QPA's Summary Report

RHIC Physics 2002-2003

5-Mar	Maint-Day	bo7-sxd	990064		Fan (1)	QPA Replaced.
8-Dec	Start-up	y2-q6	990100		Transformer (12V ) failed	QPA Replaced.
15-Jan	0:05:00	y2-q89	990167	Would not reset, CAS replaced the entire QPA.	Unable to reset	QPA Replaced.
9-Dec	Start-up	y6-q7		run and was accidentally pulled off.	Fan Fault, wire removed	Repaired.
19-May	12:52:08	y8-q7		script (tape) once again and the fan fault did not re-appear.	Fan Fault	Cleared by itself.
4-Apr	13:56:56	yi10-q89		to reduce the error signal when the unit passes through to zero amps.	error signal spiked near zero amps	Changed Resistor Values across diode pack in series with the load.
21-Mar	21:10:07	yi2-tq6	990172	RQP-03, indicating a FUSE FAULT (eralier there had been a power dip caused to severe weather, all units put into weather alert mode)	Fuse Fault	QPA Replaced.
9-Dec	Start-up	yi3-qf7		closed. Cycled several times but didn't clear the problem, so switches were replaced.	Fan Fault (2 Switches)	Replaced
21-Dec	17:10:50	yi3-tq5		Tripped and indicated a OVC fault. MCR was unable to recover due to a communications to cross talk between the 4-20mA current readback signals of the Tq's and the dh0 power supply.	OVC	Recovered.
26-Dec	Maint-Day	yi3-tq5	990267	No loose connections found as an OVC could have been caused by loosing AC power (Ref to 21 Dec) Unit was pulled and replaced. Ran for several days on the bench before tripping on OVC fault again. No indications as to why, changed IGBT boards and will re-test.	OVC (Ref to 21-Dec)	QPA Replaced.
9-Dec	Start-up	yi6-qf3		closed. Cycled several times but didn't clear the problem, so switch was replaced.	Fan Fault (1 Switches)	Replaced
19-Feb	Maint-Day	yi7-qf3			Fan Fault (3 Switches)	Replaced
6-Feb	Maint-Day	yo4-qd7		Both fan switches failed due to contact contamination causing high resistance build up.	Fan Fault (2 Switches)	Replaced
5-Mar	Maint-Day	yo8-qd1		where no faults listed. Suspect the D connectors to be the possible fault.	D Connectors (2)	Changed to new backshell and hardware.
20-Feb	Maint-Day	yo8-qf8		Tripped the QL on turn on, but no faults. Possible bad cable from the QPA, only happened once. Replaced "D" Connector backshells and hardware as the connectors where not pulled tight enough into the sockets.	D Connectors (2)	Changed to new backshell and hardware.

Quench Switches, Building 1010A Summary Report

RHIC Physics 2002-2003

Date	Time	Switch ID	Analysis	Fault	Status
26-Dec	Maint-Day	Fan In / Fan Out Chassis	inside one connectors to allow for a better contact. At the moment, we have no spares, Don will order them.	KING style K-lock	Repaired
27-Dec	15:45:07	B10DQPSW		Local-Remote Switch Contacts	Cycled.
8-Jan	Maint-Day	Both	Checked for loose connections.	Routine Maintenance	Good

### Bruker Sextupole Power Supply Summary Report

RHIC Physics 2002-2003

Date	Time	Supply	Alcove	Analysis	Fault	Status
3-Dec	Start-up	bi1-sxf	1B	Found to be in the OFF state, no explanation at this time	Unknown	Unknown
3-Dec	Start-up	bi1-sxd	1B	Found to be in the OFF state, no explanation at this time	Unknown	Unknown
5-Dec	Start-up	bi5-sxf	5B	When turned on, output voltage to the supply would rail upwards to +90 volts. Found the and replaced.	Magnet Lead disconnected	Repaired
8-Dec	Start-up	bi9-sxd	9B	Open voltage tap at the rear of the power supply. 200 ohm resistor found to be open.	Voltage Tap, open	Repaired
9-Dec	Start-up	bo11-sxd	11B	the alcove seems cool enough.	Unknown	Monitoring
9-Dec	Start-up	bi1-sxf	1B	in the alcove seems cool enough.	Unknown	Monitoring
9-Dec	Start-up	bi1-sxf	1B	Cryo reported a shaky lead flow but reports there is enough to turn on.	Cryo	Unknown
10-Dec	Start-up	bo11-sxd	11B	flow.	Temperature ?	Monitoring
18-Dec	Maint-day	bi1-sxf	1B	filters.	Temperature ?	Monitoring
18-Dec	18:10:26	yi11-sxd	11B	Tripped off on a ramp while recovering from a maintenance day.	Unknown	No action required
26-Dec	21:40:06	yi11-sxd	11B	free ramp and see if it holds. TJS	Unknown	Recovering
26-Dec	23:18:10	yi11-sxd	11B	Tripped on the up ramp, Quench, Standby error, Crowbar. Trips almost every time around by coming in.	Sextupole resistance	Re-tuning
27-Dec	0:46:05	yi11-sxd	11B	<a href="#">Same as Ref to 26-Dec.</a>	Sextupole resistance	Re-tuning
27-Dec	22:59:00	yi3-sxd	3B	via the scripts.	Unknown at this time.	No Repair at this time.
27-Dec	22:59:00	bo3-sxd	3B	via the scripts.	Unknown at this time.	No Repair at this time.
27-Dec	23:15:00	yi3-sxd	3B	via the scripts.	Unknown at this time.	No Repair at this time.
27-Dec	23:15:00	bo3-sxd	3B	via the scripts.	Unknown at this time.	No Repair at this time.
30-Dec	7:50:00	bi1-sxd	1B	Tripped off during a store.	Unknown at this time.	Tunnel Access Required. (See 2 Jan)
30-Dec	10:17:00	yo1-sxd	1B	Tripped off during a store.	Unknown at this time.	Tunnel Access Required. (See 2 Jan)
30-Dec	10:17:00	bi1-sxd	1B	Tripped off during a store.	Unknown at this time.	Tunnel Access Required. (See 2 Jan)
2-Jan	Maint-day	yi11-sxd	11B	<a href="#">(Ref to 26-Dec)</a> Replaced the medium Res Fiber Optics card.	Res Card	Replaced
2-Jan	Maint-day	bi1-sxd	1B	<a href="#">(Ref to 30-Dec)</a> Investigated for any loose connections and found none. Power supply operated okay.	Tripping to Off	Found nothing at this time.

**Bruker Sextupole Power Supply Summary Report**

RHIC Physics 2002-2003

2-Jan	Maint-day	Alcove 11B	11B	complaints. (Ref to DEC 26, 27, JAN 2)	Tripping to Off	Monitoring the AC Line Voltage
8-Jan	Maint-day	yi11-sxd	11B	that required tightening on the power lead side that goes to the ceramic feed thru.	Routine Maintenance	Good
8-Jan	Maint-day	yi11-sxf	11B	magnet, auxiliary splice at rear of tree extremely loose, retightened.	Routine Maintenance	Good
8-Jan	Maint-day	bi1-sxd	1B	that required tightening on the power supply cables to the din rail connectors.	Routine Maintenance	Good
8-Jan	Recover from Maint-Day	bi1-sxd	1B	during the maintenance day due to ice ball build ups from Saturday Jan 4, 2003.	Resistance Change	Re-tuning
8-Jan	Recover from Maint-Day	yo1-sxd	1B	during the maintenance day due to ice ball build ups from Saturday Jan 4, 2003.	Resistance Change	Re-tuning
8-Jan	Recover from Maint-Day	bi9-sxd	9B	during the maintenance day due to ice ball build ups from Saturday Jan 4, 2003.	Resistance Change	Re-tuning
8-Jan	Recover from Maint-Day	yi7-sxd	7B	during the maintenance day due to ice ball build ups from Saturday Jan 4, 2003.	Resistance Change	Re-tuning
15-Jan	Maint-day	yo1-sxd	1B	be slightly loose, one wire easily pulled out.	Routine Maintenance	Re-tightened
15-Jan	Maint-day	bi9-sxd	9B	be slightly loose.	Routine Maintenance	Re-tightened
15-Jan	Maint-day	yi7-sxd	7B	be slightly loose.	Routine Maintenance	Re-tightened
30-Jan	23:52:00	yo5-sxd	5B	Quench trip and crowbar, runs to just over 20.5A, and trips at about 19.5A	Quench, crowbar	(Ref to 30-Jan @ 1:16:00)
31-Jan	1:16:00	yo5-sxd	5B	the quench detector earlier. George suggests that we ramp to park, restore and ramp this current and return to injection; this will hopefully resolve this tripping problem.	Sextupole, out of calibration	Re-calibrated
26-Apr	19:02:08	bo11-sxd	11B	11b-qd1 quench detector.		
26-Apr	19:02:24	yi11-sxf	11B	11b-qd1 quench detector.		
26-Apr	19:02:24	yi11-sxd	11B	11b-qd1 quench detector.		
26-Apr	20:25:57	bo11-sxd	11B	The 11 o'clock sextupoles have quenched and will not respond to the recovery scripts. He is looking from home.	Error on the quench detector would not clear via the scripts.	George cleared the error
26-Apr	20:25:57	bo11-sxf	11B	The 11 o'clock sextupoles have quenched and will not respond to the recovery scripts. He is looking from home.	Error on the quench detector would not clear via the scripts.	George cleared the error

**Bruker Sextupole Power Supply Summary Report**

RHIC Physics 2002-2003

26-Apr	20:26:09	yi11-sxf	11B	The 11 o'clock sextupoles have quenched and will not respond to the recovery scripts. He is looking from home.	Error on the quench detector would not clear via the scripts.	George cleared the error
26-Apr	20:26:09	yi11-sxd	11B	The 11 o'clock sextupoles have quenched and will not respond to the recovery scripts. He is looking from home.	Error on the quench detector would not clear via the scripts.	George cleared the error
27-Apr	2:56:21	bo11-sxf	11B	11b-qd1 quench detector.	Error on the quench detector would not clear via the scripts.	George cleared the error
27-Apr	2:56:21	bo11-sxd	11B	11b-qd1 quench detector.	Error on the quench detector would not clear via the scripts.	George cleared the error

**Snake Power Supply Summary Report**

RHIC Physics 2002-2003

Date	Time	Supply	Alcove	Analysis	Fault	Status
5-Mar	Maint-Day	bi9-snk7-1.4	9C	swapped the current reg card with the bi9-snk7-2.3 supply and it works for now.	DAC card puts out a negative offset.	DAC card needs to be replaced.
12-Mar	Maint-Day	bi9-snk7-1.4	9C		DAC card puts out a negative offset.	Replaced Card
17-Apr	Maint-Day	bi9snk7-2.3	9C	Quench Log).	Internal Magnet Problem	Needs to be Replaced durin SHUT DOWN
26-Mar	6:02 PM	bo3-snk7-2.3	3C	Unable to operate remotely, Investigation brought out a possible loose AC connection or the control card with bo3-snk7-1.4 fixed the problem.	Unable to operate remotely	Running
17-Apr	Maint-Day	yo9-snk7-1.4	9C	the snake vessel. This is not good, cables where corrected.	Incorrect wiring at the magnet	Repaired
17-Apr	Maint-Day	yo9-snk7-2.3	9C		Internal Magnet Problem	Needs to be Replaced during SHUT DOWN
23-Apr	Maint-Day	yo9-snk7-2.3	9C	Yo9-snk7-2.3-qp qpa to qpaic cable was removed from the qpaic end so a bypass could be plugged in to the qpaic, port 5B. The p.s. should stay in the OFF state.	Magnet Open	Magnet needs to be pulled out for repairs

### Spin Rotator Power Supply Summary Report

RHIC Physics 2002-2003

Date	Time	Supply	S/N	Alcove	Analysis	Fault	Status
5-Mar	Maint-Day	bi8-rot3-1.4		9A	Supply is good now.	Tripping while running up	Buffer card replaced.
17-Apr	Maint-Day	bi8-rot3-1.4		9A	to alcove for operations.	Routine Maint.	Good
26-Apr	11:34:46	bi8-rot3-1.4		9A	Polarity. Reversed the polarity at the Power Supply End. <b>NOTE: New Labels were not put in the cables at this time.</b>	Wrong Polarity	Switched at the Power Supply end.
10-May	5:28:16	bi8-rot3-1.4		9A	everytime they are ramping the magnet.	Iground Fault	Monitoring
10-May	5:28:16	bi8-rot3-1.4		9A	changed on the next maintenance day if permitted.		
16-May	Maint-Day	bi8-rot3-1.4		9A	ground current followed.	Iground Fault	Crowbar cable not connected to negative side of supply, found laying on top of the P.S. chassis.
19-May	Maint-Day	bi8-rot3-1.4		9A	card, kept the same time constant, ran up to one amp, all looked good. (From the shop: fault?)	Current Reg Card	Replaced
17-Apr	Maint-Day	bi8-rot3-2.3		9A	to alcove for operations.	Nuetral wire to 120vac, J401 bad crimp	Repaired
26-Apr	11:34:46	bi8-rot3-2.3		9A	Polarity. Reversed the polarity at the Power Supply End. <b>NOTE: New Labels were not put in the cables at this time.</b>	Wrong Polarity	Switched at the Power Supply end.
26-Mar	22:13:31	bo6-rot3-1.4		7A	Fill #3262, supply tripped to the OFF state		
30-Mar	19:48:50	bo6-rot3-1.4		7A	Fill #3324, supply tripped to the OFF state while running at 1.05amps		
30-Mar	22:44:23	bo6-rot3-1.4		7A	Fill #3326, supply tripped to the OFF state while running at 0.17amps		
31-Mar	18:30:27	bo6-rot3-1.4		7A	Fill #3342, Supply tripped to the OFF State, Alarm Log shows No PS / Illegal State		
2-Apr	Maint-Day	bo6-rot3-1.4		7A	(Ref to 31-Mar) No PS / Illegal State	Node Card Cable	Replaced
5-Apr	23:35:39	bo6-rot3-1.4		7A	Trps to Off State when running at Park (less then 1 amp)		
8-Apr	3:08:05	bo6-rot3-1.4		7A	Tripped to the Off State, running at idle current.		
9-Apr	Maint-Day	bo6-rot3-1.4		7A	Tripping to OFF, Pulled original 3U chassis and re-worked Housekeeping Power Supply fault.	Tripped to OFF	Monitoring
17-Apr	Maint-Day	bo6-rot3-1.4		7A	Removed the Ground Current "D" Connector from the rear of the QPA due to a grounding damaging the amplifier circuits.	Internal Magnet Short to ground	Needs to be corrected during the next SHUT DOWN!
16-Apr	Maint-Day	bo6-rot3-2.3		7A	to alcove for operations.	Loose +5vdc (red) molex connection to backplane board.	Repaired

### Spin Rotator Power Supply Summary Report

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23-Apr	Maint-Day	bo7-rot3-1.4		7C	to alcove for operations.	Routine Maint.	Good
26-Apr	11:34:51	bo7-rot3-1.4		7C	Polarity. Reversed the polarity at the Power Supply End. <b>NOTE: New Labels were not put in the cables at this time.</b>	Wrong Polarity	Switched at the Power Supply end.
23-Apr	Maint-Day	bo7-rot3-2.3		7C	to alcove for operations. (Found +5vdc of P-423 to be insufficient)	Routine Maint.	Good
26-Apr	11:34:51	bo7-rot3-2.3		7C	Polarity. Reversed the polarity at the Power Supply End. <b>NOTE: New Labels were not put in the cables at this time.</b>	Wrong Polarity	Switched at the Power Supply end.
14-Apr	8:29:46	yi6-rot3-1.4		7A	Tripped to the Off State, running at idle current.		Put on maintenance list to be repaired.
15-Apr	10:00:09	yi6-rot3-1.4		7A			
16-Apr	Maint-Day	yi6-rot3-1.4		7A	to alcove for operations.	Nuetral wire to 120vac, J401 bad crimp	Repaired
26-Mar	21:41:41	yi6-rot3-2.3		7A	Fill # 3262, supply tripped to the OFF state		
31-Mar	0:02:06	yi6-rot3-2.3		7A	Fill #3326, supply tripped to the OFF state while running at 0.89amps		
2-Apr	Maint-Day	yi6-rot3-2.3		7A	<a href="#">(Ref to 31-Mar)</a> Supply shutting OFF.	Node Card Cable	Replaced
3-Apr	21:21:38	yi6-rot3-2.3		7A	Trps to Off State when running at Park (less then 1 amp)		
4-Apr	8:24:52	yi6-rot3-2.3		7A	I/O Difference, Frame Error		
6-Apr	23:51:10	yi6-rot3-2.3		7A	Trps to Off State when running at Park (less then 1 amp)		
7-Apr	9:36:04	yi6-rot3-2.3		7A	I/O Difference, Frame Error, running at idle current.		
8-Apr	7:50:00	yi6-rot3-2.3		7A	I/O Difference, Frame Error, running at idle current.		
					Tripping to OFF, Pulled original 3U chassis and re-worked Housekeeping Power Supply		
9-Apr	Maint-Day	yi6-rot3-2.3		7A	fault.	Tripped to OFF	Monitoring
14-Apr	12:00:07	yi6-rot3-2.3		7A		Controls Problem?	Put on maintenance list to be repaired.
15-Apr	1:18:53	yi6-rot3-2.3		7A			
16-Apr	Maint-Day	yi6-rot3-2.3		7A	Replaced the low res card and I/O Difference has not returned.	Low Res Fiber Optics Card	Replaced Card
9-May	Maint-Day	yi6-rot3-2.3		7A	ground current fault cleared. Nothing else found, monitoring system.	Iground Fault	Found nothing wrong.
25-Mar	Maint-Day	yi7-rot3-1.4		7C	fault, not properly crimped.	Node Card Cable, Improper crimp.	Repaired
23-Apr	Maint-Day	yi7-rot3-1.4		7C	to alcove for operations.	Routine Maint.	Good

### Spin Rotator Power Supply Summary Report

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26-Apr	11:34:45	yi7-rot3-1.4		7C	Polarity. Reversed the polarity at the Power Supply End. <b>NOTE: New Labels were not put in the cables at this time.</b>	Wrong Polarity	Switched at the Power Supply end.
25-Mar	Maint-Day	yi7-rot3-2.3		7C	seated in the "D" connector, reseated and made sure it was locked into place.	Node Card Cable, Loose Pin	Repaired
31-Mar	2:44:25	yi7-rot3-2.3		7C	Fill #3328, supply tripped to the OFF state while running at 0.83amps		
4-Apr	14:16:12	yi7-rot3-2.3		7C	Trps to Off State when running at Park (less then 1 amp)		
7-Apr	19:22:26	yi7-rot3-2.3		7C	Tripped to the Off State, running at idle current.		Need to replace Node Card Cable
9-Apr	Maint-Day	yi7-rot3-2.3		7C	Tripping to OFF, Pulled original 3U chassis and re-worked Housekeeping Power Supply fault.	Tripped to OFF	Monitoring
9-Apr	Maint-Day	yi7-rot3-2.3		7C	supply continues to trip to the OFF state		Back-up Cable (45ft)
26-Apr	11:34:45	yi7-rot3-2.3		7C	Polarity. Reversed the polarity at the Power Supply End. <b>NOTE: New Labels were not put in the cables at this time.</b>	Wrong Polarity	Switched at the Power Supply end.
28-Mar	14:09:46	yo5-rot3-1.4		5C	Fill #3271, supply tripped to the OFF state.		
3-Apr	7:48:28	yo5-rot3-1.4		5C	Trps to Off State when running at Park (less then 1 amp)		
4-Apr	5:21:20	yo5-rot3-1.4		5C	Trps to Off State when running at Park (less then 1 amp)		
4-Apr	13:13:50	yo5-rot3-1.4		5C	Trps to Off State when running at Park (less then 1 amp)		
5-Apr	4:26:08	yo5-rot3-1.4		5C	Trps to Off State when running at Park (less then 1 amp)		
7-Apr	2:22:17	yo5-rot3-1.4		5C	Tripped to the Off State, running at idle current.		
9-Apr	Maint-Day	yo5-rot3-1.4		5C	Replaced the 3U chassis due to tripping Off (Ref to Previous faults)	Tripped to OFF	Replaced 3U Chassis
9-Apr	Maint-Day	yo5-rot3-1.4		5C	supply continues to trip to the OFF state		Back-up Cable (34ft)
30-Mar	4:32:29	yo5-rot3-2.3		5C	spiked to maximum, current followed, setpoint remained constant near 0.81amps.		
2-Apr	Maint-Day	yo5-rot3-2.3	0006C0024	5C	(Ref to 30-Mar) Confirmed that the Voltage to full output when tested in tunnel. Replaced power 10 Unit.	Power 10 Unit	Replaced PS
8-Apr	8:35:33	yo5-rot3-2.3		5C	+6.42amps while the current remained near zero at -0.14amps) Error signal passed the threshold for more then 4 seconds.		Reset
14-Apr	9:45:07	yo5-rot3-2.3		5C	spikeing meaning possible fault within the current reg card.		Put on maintenance list to be repaired.
16-Apr	Maint-Day	yo5-rot3-2.3		5C	Possible wrong ramp rate used prior to this fault found.	Power Ten Over Voltage	Reset
25-Apr	7:31:57	yo5-rot3-2.3		5C	Tripped to Off while running at Idle Current, possible 3U chassis housekeeping molex connections not proper as seen from others that where reworked.	Tripped to OFF	
25-Apr	11:12:44	yo5-rot3-2.3		5C	Tripped to Off while running at Idle Current, possible 3U chassis housekeeping molex connections not proper as seen from others that where reworked.	Tripped to OFF	
26-Apr	1:01:24	yo5-rot3-2.3		5C	Tripped to the Off State, running at idle current.	Tripped to OFF	Need to replace or rework 3U chassis

### Spin Rotator Power Supply Summary Report

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1-May	Maint-Day	yo5-rot3-2.3		5C	give it the check over and run the chassis in the test rack.	Tripped to OFF	Replaced 3U Chassis
26-May	10:24:52	yo5-rot3-2.3		5C	Tripped to Standby-Error, 11:52:37: comment by ganetis... yo5-rot3-2.3 had an error fault  1210 -- D. Bruno reported that the current regulator card for the yo5-rot3-2.3 supply needs to be replaced. CAS replaced the card.	Current Reg Card	Replaced
17-Apr	Maint-Day	yo8-rot3-1.4		9A	to alcove for operations.	Routine Maint.	Good
26-Apr	11:34:47	yo8-rot3-1.4		9A	Polarity. Reversed the polarity at the Power Supply End. <b>NOTE: New Labels were not put in the cables at this time.</b>	Wrong Polarity	Switched at the Power Supply end.
31-Mar	5:39:10	yo8-rot3-2.3		9A	Fill # 3331, supply tripped to the OFF state while running only at 1.08amps.		Need to replace Node Card Cable
9-Apr	Maint-Day	yo8-rot3-2.3		9A	Tripping to OFF, Pulled original 3U chassis and re-worked Housekeeping Power Supply  fault.	Tripped to OFF	Monitoring
9-Apr	Maint-Day	yo8-rot3-2.3		9A	supply continues to trip to the OFF state		Back-up Cable (75ft)
26-Apr	11:34:47	yo8-rot3-2.3		9A	Polarity. Reversed the polarity at the Power Supply End. <b>NOTE: New Labels were not put in the cables at this time.</b>	Wrong Polarity	Switched at the Power Supply end.

### Miscellaneous Fault Summary Report

RHIC Physics 2002-2003

Date	Time	Device	Analysis	Fault	Status
15-Dec	Day Shift	1004B Permit Module A	Found the problem to be with the yellow quench link out jack. A six blade contact on the inside, found three of the blades to be broken.	Broken jack connector	Replaced
26-Dec	Maint-Day	1006B Permit Module	Replaced due to possible faults.	Maintenance	Replaced
15-Dec	Day Shift	1010a Permit Module	unexplained trips during the last run.	Broken jack connector	Replaced
20-Dec		208Vac Line Monitor 1008B	Found the Peak to peak voltage very low using the postmortems.	Unknown at this time.	??????????
8-Jan	Late Afternoon	4b-time.B	power line loss that feeds building 1004B. Multiple systems required attention in addition to PS3 and PS4 Front End Computers going down.	Power Loss	Recovered
2-Dec	Start-up	6 O'clock Dhx heater chassis	Isolated power supply failed.	DC/DC converter	Repaired
26-Feb	Maint-Day	Cooling Fans	Building 1010 and 1002		All Good
6-Dec	12:15:00	K-Lock, QPAIC	reading approx 175 ohms. Replaced cable and put on new ends.	K-Lock Cable	Replaced
26-Apr	17:12:00	Lead Flow	17:12:00: Several correctors in the blue ring around 10 o'clock tripped off on Lead flow faults. ring access to change out a thermostat if this happens again.	Cryo Lead flow	Recovered
26-Apr	18:35:00	Lead Flow	correctors off until they investigate the problem further. 19:10:00: Cryo reports that they need to replace an analog board in the 10 o'clock service building.	Cryo Lead flow	Recovered
27-Apr	2:30:00	Lead Flow	supply for the cryo electronics in the 10 o'clock	Cryo Lead flow	Recovered
6-May	10:29:36	Permit Module 1006B	Unexplained at first, but as 6b-ps1 QLI, MCR was able to recover. ( <a href="#">Ref 6-May 22:45:12</a> )		
6-May	19:53:28	Permit Module 1006B	Cables were reseated and an attempt to recover the 6b-ps1 QLI failed. ( <a href="#">Ref 6-May 22:45:12</a> )		
6-May	22:45:12	Permit Module 1006B	connector panel.	1006B Permit Module	Repaired
20-Dec	13:54:34	Power Dip	Weather	Power Dip	Recovered
17-Mar	11:20:00	Power Dip	valves g2-svx, yi2-sv1, and bo2-sv1 also closed. The WFG's for cfe-5a-ps1 had to be reinitialized. C. Magoulas notified the MCR that today's power dip was caused by a 4 cycle dip in the LIPA voltage to	LIPA	Recovered
6-Dec	12:15:00	QPAIC to Quench Det.	the QPAIC chassis. Occurred during modification of chassis.	QPAIC Signals Swapped	Repaired
27-May	Maint-Day	1006B K-lock Cable	beam permit module I/O panel.	Connections?	Replaced