

COMPUTATION BOOK

TPC II

TPC	NAME
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JUNE, 2006 →

Course

10

*1-21
5-27*



AMPAD, Dallas, TX. 75252

22-156

l@/h7aEz

CONU SYSTEMS

6/24/06 1000 FIND INNER ANODE 9-1 TRIPS AT

LOW VOLTAGE (100V), LOOK AT SERIAL SESSION.
V READ BACK ~ ODD - OFF BY 50 VOLTS, TRIP IS IMMEDIATE BUT DON'T SEE CURRENT.

NEED ACCESS TO DEBUG (WIRE OR MODULE).

END OF RUN = @/26/06

6/27/06 9-1 INNER LOOKS LIKE PS CARD - TRIPS WITH NO LOAD. TRY 9-1 ON 9-2 - OK @ 200V. WHEW! - REPLACE IN FALL
SHUTDOWN PLATFORM - ALL BREAKERS OFF

10/10/06 START TURNING ON!

1. SERIAL SESSIONS TO LEICHTS (9037, 9038) NO LONGER WORK - SERIAL SERVER WAS REPLACED OVER SUMMER.
BAUD RATE - PORT #? - WAYNE SETS COMM PARAMS + NOW OK.

2. SVT R00 BOXES MOVED \Rightarrow ALL CABLES DISRUPTED.

3. BOTTOM UPS IN 2A9 HAS RED LIGHT - BATTERY?

1045 CHECK ANODE HV @ 200V - OUTERS OK
INNERS OK

\Rightarrow 9-1 LOOKS OK @ 200V? LEAVE FOR NOW

\rightarrow LEICHT SERIAL SESSION COMM / ALTUS

BAUD RATE = 19,200

8 BITS NO PARITY

XOFF AT 64

1 STOP BIT

NO LOCAL ECHO

1500 HOOK UP WAVEFORM + CHECK RATE LIMITER - OK.

1530 UNPLUG 2ND CPD + INTERFACE CARD FROM INNER ANODE CRATE - LEAVE LIKE THIS FOR ARCNST CRASH TEST.

10/11/06 1430 INNER ARCNST STILL UP!

START TURNING ON FC + GLASSMAN

10/11/06 } 1500 TEST FC - 2 MΩ IN IFCE

AFTER 1 HOUR

	2KV	5KV	10KV	15KV	20KV	25KV	28KV	28KV
OFCW	5.551	13.744	27.391	41.044	54.686	68.321	76.518	76.54
OFCB	5.551	13.744	27.390	41.043	54.684	68.321	76.515	76.508
IFCW	5.550	13.743	27.389	41.039	54.679	68.319	76.510	76.501
IFCB	5.520	13.669	27.240	40.818	54.384	68.060	76.279	76.357

Δ = 300 Δ = 250 Δ = 235 Δ = -150

NOTE - THIS LEVEL NOT SEEN IN 3/2006

LEAVE ON FOR 1 HOUR 1 MΩ INSTEAD OF 2

NO MAGNET + BLOWER MOTOR IS OFF - ONLY MOVING COOL BLOW
OFCW STABLE FOR 1 HOUR

10/12/06 } 1000 } INNER ARCNET STILL ALIVE

10/13/06 } 1000 } " " " "

1030 } AL SPOTS SOMETHING SHINY IN INNER FC EAST,
IT'S ~ 6:30 + 1.5 - 2 FT IN. WE ATTEMPT TO GET
IT OUT OF THERE - FIND ~ 3 WHITE CHIPS (PAINT?) +
GREENISH CHIP

TRY FC AGAIN

- 45 MIN

	2KV	5KV	10KV	15KV	20KV	25KV	28KV	28KV
OFCW	5.550	13.746	27.395	41.051	54.689	68.334	76.530	76.524
OFCB	5.550	13.745	27.394	41.048	54.691	68.330	76.524	76.521
IFCW	5.550	13.744	27.392	41.046	54.684	68.325	76.519	76.515
IFCB	5.520	13.670	27.243	40.823	54.411	68.051	76.312	76.316

Δ = -280 Δ = -275 Δ = -200 Δ = -200

1500 } CHECK GG CABLES CAPACITANCE - ALL OK ⇒ ALL HOOKS

10/30/06 } 1030, BACK FROM VACATION

VME PROC 9015 (GAS + HYGROM) DOESN'T BOOT
WEATHER DOES 9030 = FTRK

DOESN'T BOOT

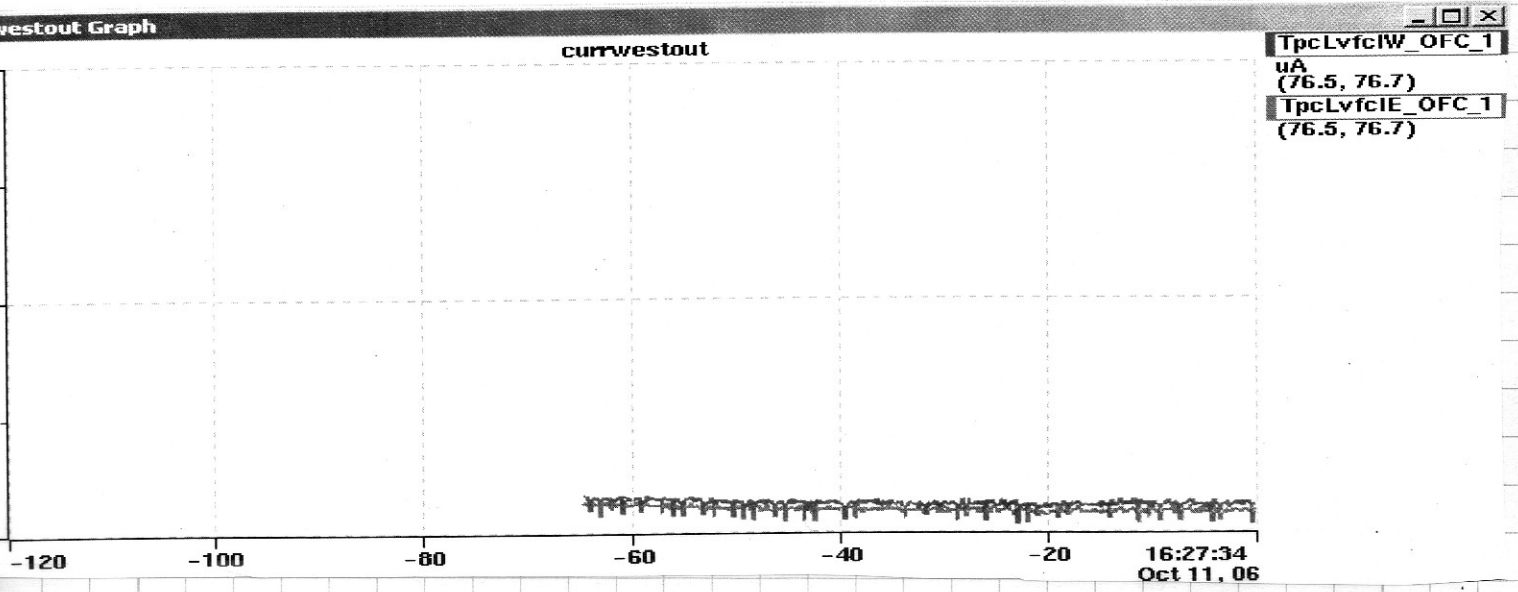
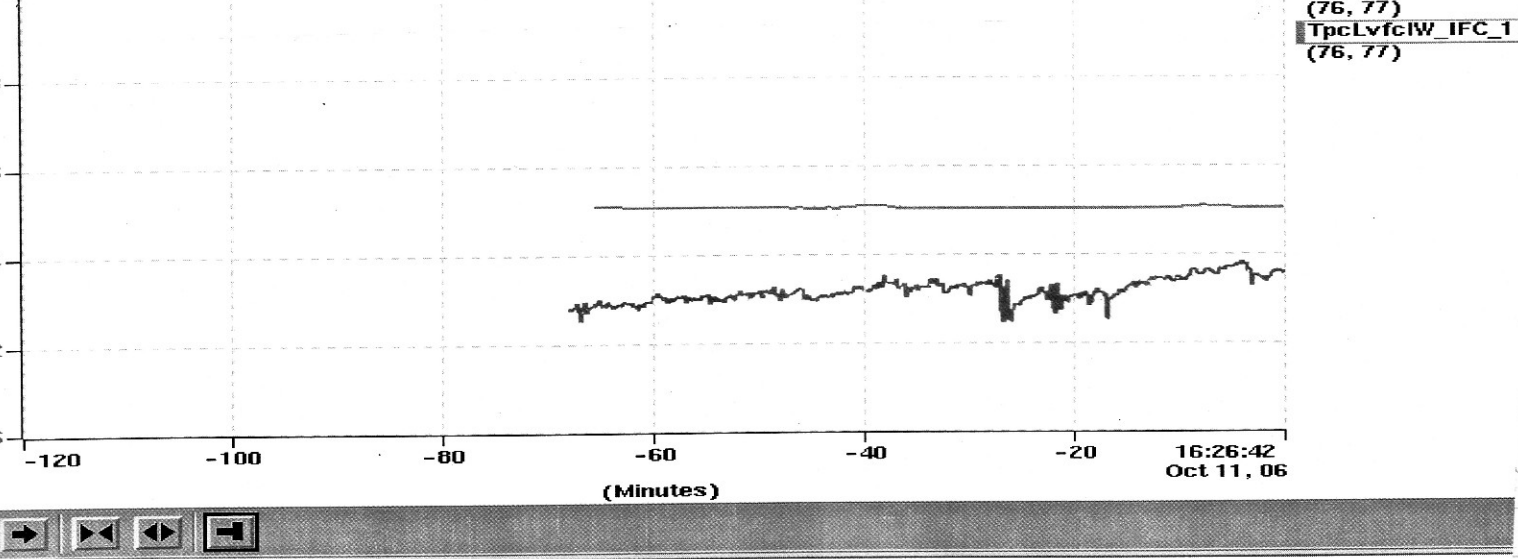
10/31/06 } ANODES OK @ 200V - CHECK FC

Blower on
No MAGNET - 2 MΩ

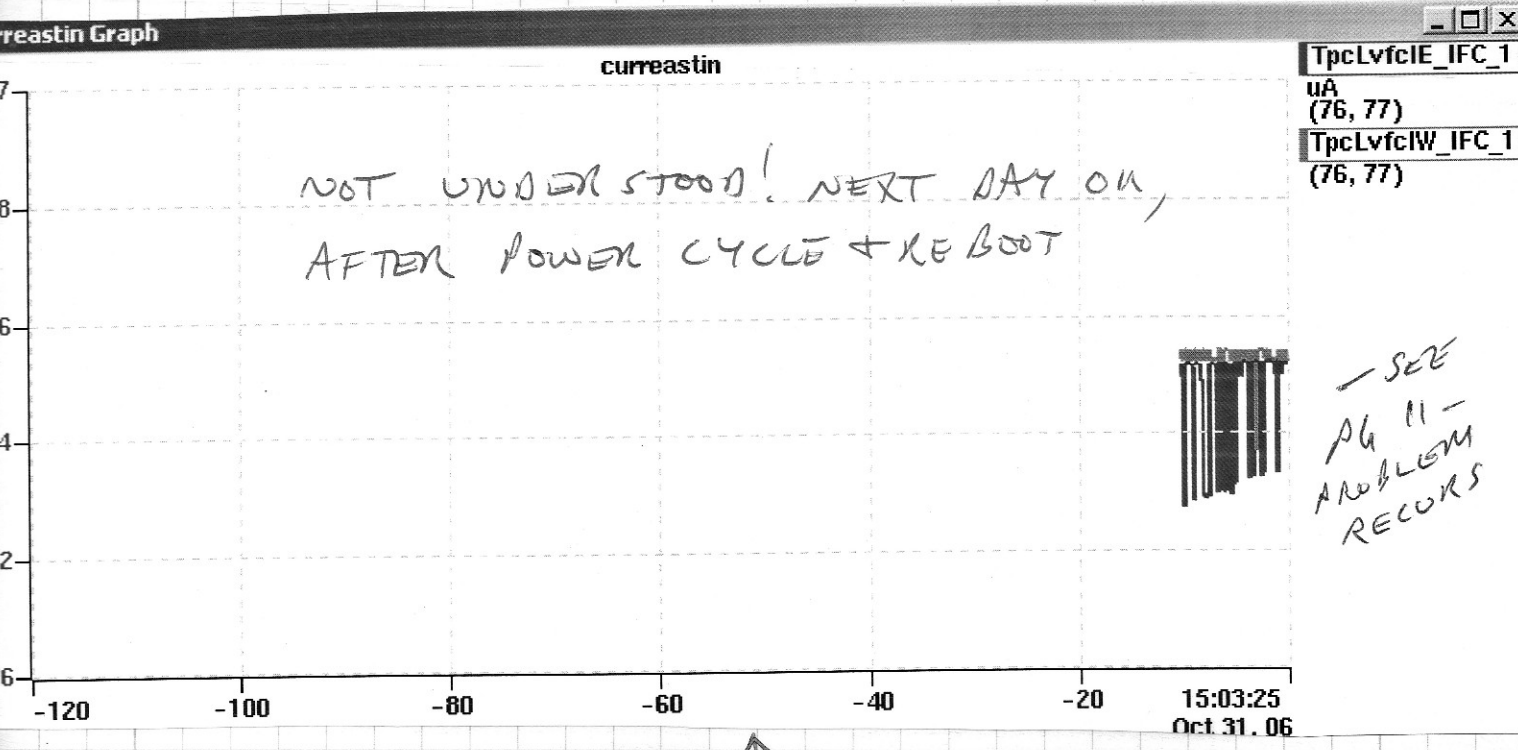
	5KV	10KV	15KV	20KV	25	28KV
OFCW	13.756	27.404	41.059	54.681	68.341	76.537
OFCB	13.756	27.402	41.053	54.699	68.337	76.534
IFCW	13.753	27.402	41.063	54.693	68.345	76.526
IFCB	13.750	27.391	41.039	54.673	68.315	76.511

76.240 LOOKS BI-STABLE!?

(76, 77)
TpcLvfcIW_IFC_1
(76, 77)



TpcLvfcIW_OFc_1
uA
(76.5, 76.7)
TpcLvfcIE_OFc_1
(76.5, 76.7)



TpcLvfcIE_IFC_1
uA
(76, 77)
TpcLvfcIW_IFC_1
(76, 77)

NOT UNDERSTOOD! NEXT DAY OK,
AFTER POWER CYCLE + REBOOT



- SEE
AG 11 -
PROBLEM
RECURS



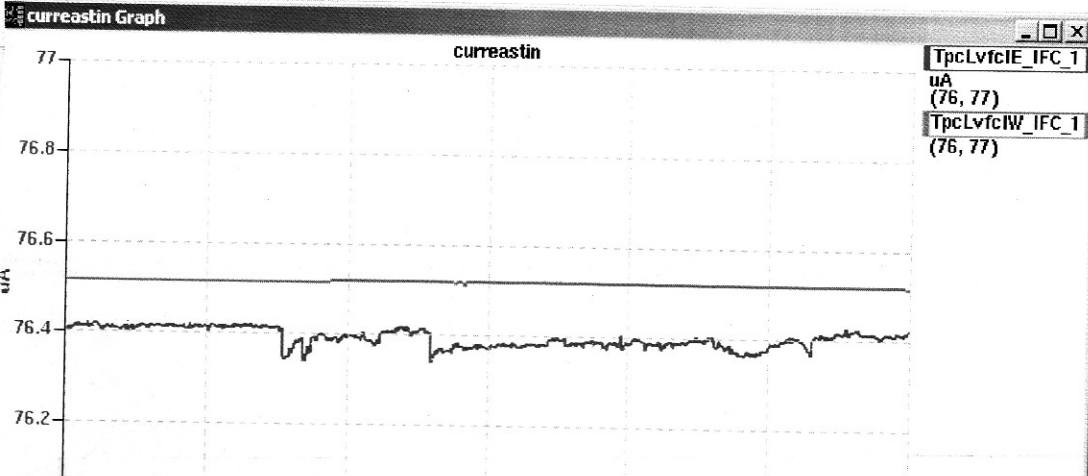
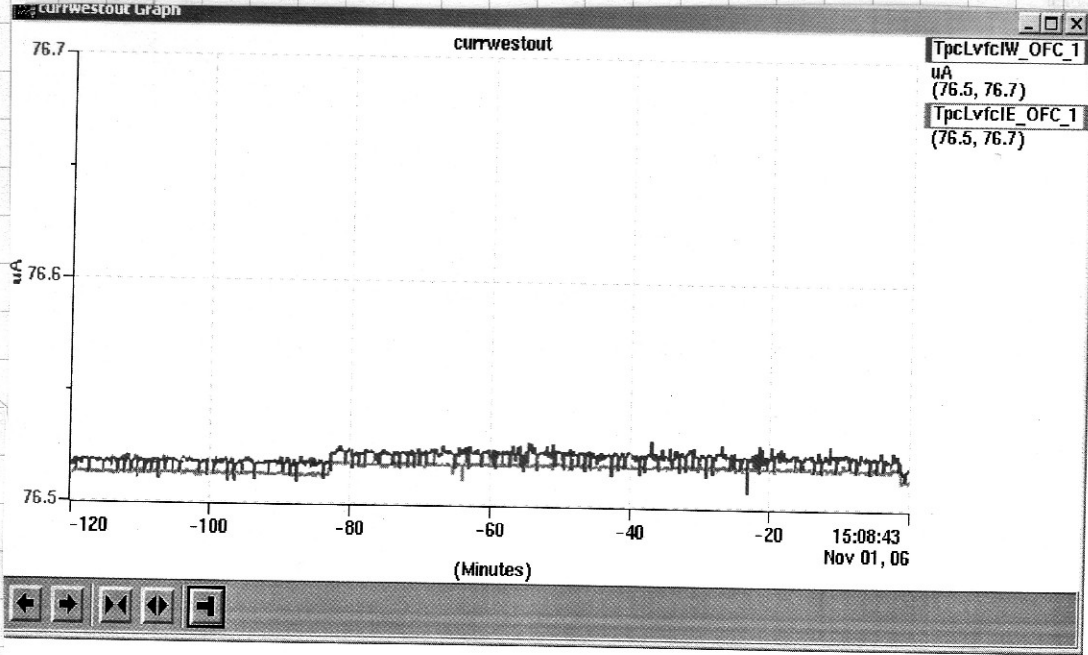
11/1/06] TRY FC AGAIN - CYCLE POWER ON DMM + SWITCHER + RE

	5KV	10KV	15KV	20KV	25KV	10:30 28KV	1:15 28KV	3:15 28KV
OFCW	13.747	27.391	41.046	54.685	68.326	76.520	76.516	
OFCF	13.746	27.392	41.043	54.685	68.321	76.516	76.514	
IFCW	13.746	27.391	41.042	54.683	68.319	76.515	76.512	
IFCF	13.671	27.242	40.871	54.496	68.110	76.266	76.412	
			40.887	Δ=190	Δ=215	Δ=250	Δ=100	Δ=100
			Δ=150					

TURN OFF

VOLTAGE

OFCW_0	76.319
OFCW_1	-177.32
OFCF_0	-33.77
OFCF_1	-177.85
IFCW_0	-23.71
IFCW_1	-172.51
IFCF_0	-23.58
IFCF_1	-177.13



GG VOLTAGES OK

CHAMBER LEAK CHECK OK 2.3 μ m

CATHODE + FC OK
ANODES ON TO 200V

FEE + RND OK ON WEST

1/6/06 WEST SIDE POLE TIP IN - WEST SIDE FEES OK

11/9/06 LEEROY 1458 LP MAIN FRAME BACK FROM VOLTTRONICS - INSTALL IN PLACE OF MP CRATE.

- REPAIRED CRATE WON IT BOOT UP!? - GIVES REPEATING 3 BEEPS \Rightarrow MOTHERBOARD. ALSO, CAN'T CLEAR PANIC OFF LIGHT

11/13/06 REMOVE FRONT PANEL TO LOOK FOR LOOSE CONNECTIONS - NONE FOUND. KENNY TAKES "REPAIRED" CRATE + SHIPPING BOX.

RESTORE MP CRATE

11/15/06 LP LEEROY CRATE GOING BACK TO VOLTTRONICS PLUG IN HV CARDS TO MP CRATE.

TRY ALL @ 200V

\Rightarrow INNER 9-1 TRIPS AGAIN - SEE PG 1 - MEAS V = 115 FOR DEMAND = 0.0. MEAS = 210 FOR DEMAND = 100 - TRIPS IMMEDIATELY

1/28/06 GND CARDS PUT IN MWPC FEE SLOTS FOR SECTOR 17. ALSO MWPC RND REMOVED. HFT WILL USE MWPC LUPS 17+18 FOR THEIR PROTOTYPE. ALSO, TRIGGER CABLE FOR SECTOR 17 EXTENDED FOR HFT?

1/28/06 1. RE-CABLE MED POWER LEEROY CRATE. LP IS BACK AGAIN FOR REPAIR. TEST ANODE TO 200V. 9-1 TRIPS ALL THE TIME \Rightarrow NEED TO SWAP CARD.

2. TEST FC TO 28KV - OK @ 28KV \sim 280mA

3. EAST SIDE FEE TESTING SHOWED HIGHER PED NOISE IN SECTORS 13, 14, 15. σ WAS \sim 2 COUNTS INSTEAD OF \sim 1. FIND INPUT CABLE TO FANOUT MODULE WAS FLAKY - REPLACED.

4. FIND PROC 9015 (HYGROMETER) BOOTED + RUNNING. DID SC DO ANYTHING? (SEE PG 2)

12/5/06

1100. WE MOVE PROCESSOR 9012 FROM THE INNER ANODE CRATE TO ITS OWN (DUMB) CRATE IN THE SAME RACK. 9012 READS OUT THE AB INTERLOCK STS AND THE TPC TEMPS FROM PETER KRATZOV'S BOX (VIA SERIAL PORT) THE AB SYSTEM IS READ VIA AN I/O CARD, WHICH WE ALSO MOVED.

12/6 TELNET 9012 REFUSED CONNECTION POWER CYCLE NO HELP → TRANSITION MODULE? COMM PORT HUNG UP NEED RESET

THE INNER ANODE PROC IS NOW ALONE IN ITS CRATE - THE HOPE IS TO IMPROVE THE ARKNET FAILURE RATE.

THE NEW CRATE IS NOT ON CANBUS. IT IS PLUGGED INTO RPS3, PORT A4 (THIS RPS IS FOR THE LECROY MAINFRAMES).

FOUND PHANTOM TELNET SESSION ON SC - KILLED + NOW 1000 EAST POLE TIP GOES IN TOMORROW

1. TEST FC TO 28KV - CURRENTS AS MAKE 4 A = 30 LEAVE FOR 1 HOUR.

2. SWAP

Hi Ken,
 > Good Morning. Good News.
 > The above 1471P(SN B68019) board is out of final test and will ship by tomorrow. You will have on your dock by 1/29.
 > I have attached a copy of the Failure Analysis Report for you.
 > Due to the repairs we had to perform, both the serial number and part number were changed.
 > You will be getting back Visyn 1471P MOD 010 with serial number of **B68459**
 > Best Regards,
 > Mary Goebel
 > RMA Coordinator
 > Universal Voltronics
 > 1/24/07

12/7/06 1000 E FB 1400 TES

SECTOR 9, 10 INNER SWAP + REPAIR 2/21/07 TESTED OK + PUT IN SPARES CABINET

PULL POLE TIP - FIND LOOSE CONNECTION ON TRIGGER CABLE. PUT POLE TIP IN - ALL OK.

CHECK FC - OK

SEE pg 9

AND = 7 100

SID

2/8/06

1100 REPLACE DEAD BATTERIES IN BOTTOM

UPS IN RACK 2A9. MOVE SOME AC CORDS:

IN BOTTOM UPS:

- TPC INTERLOCUS
- 2X TPC INTERLOCUS (VIA TERMINAL STRIP)
- TPC FLOWMETERS

MOVE TO UPPER UPS

- CANBUS CRATE
- ETHERNET SERVER
- SERIAL SERVER
- SMALL ETHERNET SWITCH (WAS HERE ALREADY)

4/2007

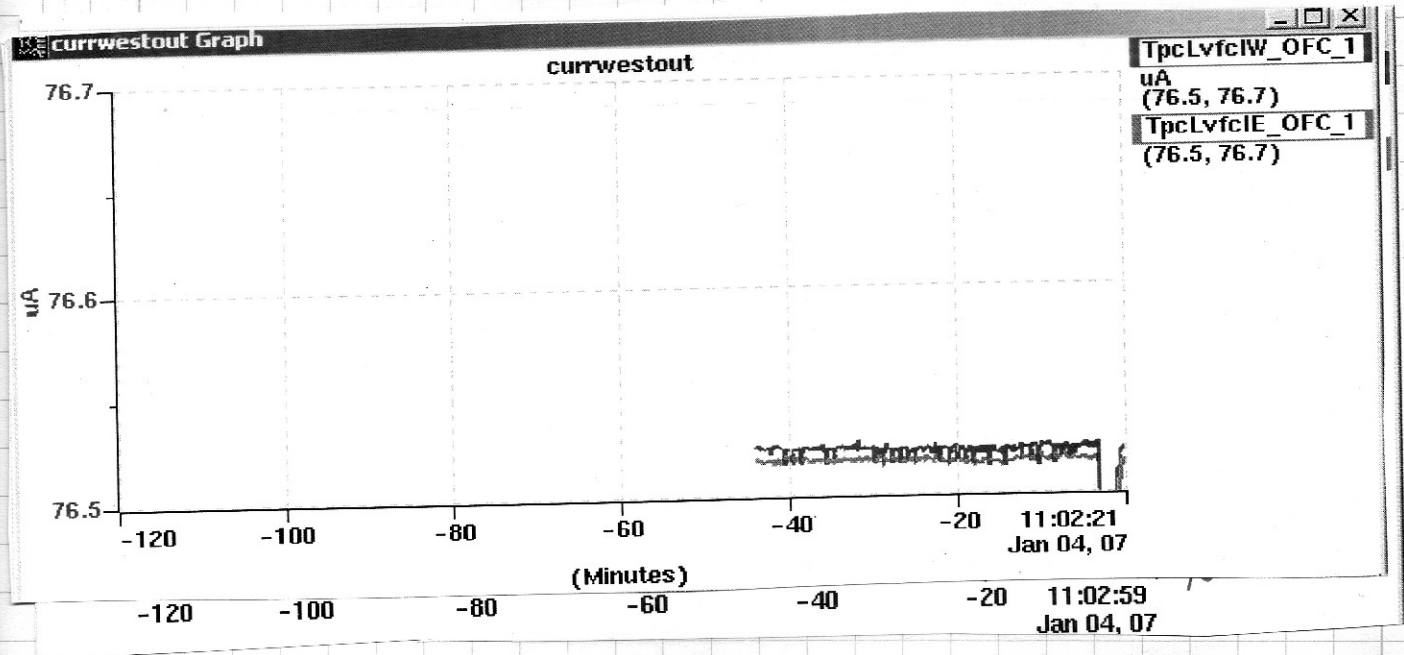
MAGNET WORK HAS BEEN ONGOING - MAIN MAG WAS AT FULL FIELD YESTERDAY FOR 15 MIN BEING BROUGHT UP AGAIN TODAY

000

EXTERNAL Ω IN IPCE = 2 M Ω

	5KV	10KV	15KV	20KV	25KV	28KV	28KV
IFCW	13.750	27.397	41.050	54.701	68.336	76.522	76.520
IFCE	13.748	27.395	41.047	54.695	68.332	76.516	76.514
IFCW	13.749	27.394	41.047	54.695	68.330	76.515	76.512
IFCE	13.673	27.244	40.823	54.397	68.048	76.238	76.264
				54.429	$\Delta=290$	$\Delta=280$	$\Delta=250$
				$\Delta=270$	10:15	11:50	

MAG TRIP



1/11/07

MAGNET WORK FINISHED - HAD 2 FAST CRASHES FROM FIELD.

CHECK FC AGAIN - CURRENTS ON, AS PER PG 7. Δ TURN ALL OFF

1/25/07

1100 LEADY 1458 MAINFRAME (FOR OUTER SECTORS) BACK FROM VOLTTRONICS AGAIN. (REPLACED MOTHERBOARD) PUT IT IN + IT SEEMS TO WORK. LEAVE ON FOR 24 HRS. PUT MED POWER 1458 IN BOX + PUT ON CLEAN ROOM ROOF. CAN BE TPC OR SVT SPACE.

1/26/07

REPAIRED 1458 STILL ON - SHOT IT DOWN.

2/7/07

DANNY RE DOES THE INTERLOCKS FOR THE LVPS. PROBLEM WAS THAT IF THE INTERLOCK CABLE TO THE BLOWER WAS UNPLUGGED (BNC) THE LVPS STAYED ON SO NOT FAIL SAFE. DANNY REWROTE THE LOGIC. I TEST THE LVPS FOR THE MURK FEET:

1. UNPLUG BLOWER CABLE - LVPS GO OFF
2. TURN OFF BLOWER - " " "

WILL TEST WATER SHUT THIS WEEK

DANNY NOW MODIFYING RACK ROW 2B LVPS (ALL)

2/12/07

1400. PUT POLARITY REVERSING CABLE IN GG FOR SECTORS 8 INNER THIS SECTOR HAS WHAT ARE PRESUMED TO BE FLOATING GG WIRES IN 2 PLACES THAT CAUSE A GRID LEAK. REVERSE POLARITY SEEMS TO LEVER IN AND CLOSE THIS LEAK.

OOPS SHOULD BE 8 OUTER - MOVED 3/6/07

2/17/07

1000 PUT 1 MΩ IN IFC EAST RESISTOR CHAIN. WAS 2 MΩ AT END OF RUN 6. TEST FC

	2 KV	5 KV	10 KV	15 KV	20 KV	25 KV	28 KV	28 KV
OFCW	5.558	13.751	27.393	41.052	54.691	68.325	76.524	76.508
OFCB	5.557	13.750	27.396	41.048	54.687	68.321	76.516	76.505
IFCW	5.557	13.750	27.397	41.049	54.688	68.321	76.515	76.505
IFCE	5.542	13.713	27.321	40.936	54.538	68.173	76.349	76.451
					Δ=150	Δ=150	Δ=160	Δ=50

20/07) 1000 HAD TO REVO NEW VME CRATE FOR PROC 9012

(INTERLOCK + TPC TEMP). 9012 HAD PROBLEMS - INTERMITTENTLY WOULDN'T BOOT ETC.

PUT IN A BETTER CRATE - STILL HAS PROB. SWAP ETHERNET PORT + CABLE ETC - STILL BAD

BILL SWAPS PROCESSORS + NOW SEEMS OK.

LEAVE NEWER CRATE IN. CRATE IS NOT ON CANBUS BUT IS ON RPS3 PORT A4.

21/07) 1000) ALL SYSTEMS BOOTED - TRY PULSER RUN

1400) 18-6 RB SHOWS NO LINK LIGHT - FOUND LUPS CABLE UNPLUGGED AT THE PS - DUE TO BLOWER WORK I ASSUME.

23-11 RECEIVER DIDN'T BOOT - JEFF CYCLES POWER ON CRATE + NOW OK

1-8 = 2-2 HAS SOPE ERRORS - POWER CYCLE NO HELP - LEAVE ON FOR AWHILE - WORKED NEXT DAY
ALL OTHERS OK. - NOISE LEVELS (σ) ~ OK 1.1 - 1.3 COUNTS

500) PLATFORM HYDROMETER KEEPS TURNING ITSELF OFF - REPLACE RECHARGEABLE BATTERY TO SEE IF IT HELPS. - SEEMS TO.

22/07) 1000 MINIMUM CONFIG FOR DAQ: TCD, EVP, BOB, EVS(1), 6B

26/07) MORE MAGNET TESTING ON SAT, INCLUDING CRASH.
RETEST FC: 1M A IN 11:15

	2	5KV	10KV	15KV	20KV	25KV	28KV	28KV
DFCW	5.557	13.749	27.394	41.047	54.687	68.324	76.513	76.516
DFCE	5.556	13.749	27.392	41.044	54.684	68.319	76.517	76.510
EFCW	5.557	13.749	27.392	41.046	54.684	68.319	76.514	76.508
ECE	5.541	13.711	27.317	40.933	54.548	68.187	76.395	76.481

Δ = 120 Δ = 30!

28/07) TURN ON FEES - R003 IN SECTOR 18 NO GOOD!
JEFF DETERMINES IT HAS A STUCK BIT IN TO 4000 # (128). BOARD RUNS OK IF TOKENS ARE RESTRICTED TO 128 <A < 200
DECISION PENDING ON WHETHER TO ROLL POLE TIP

3/5/07 0900 AL + BOB DISCOVER SMALL WATER LEAK IN TPC SYST
ON WEST SIDE @ ~ 6:00, OUTSIDE POLETOP. ON SECTION THAT
GOES TO SECTORS 5, 6. CRACKED PVC ELBOW. REPLACE ELBOW

3/8/07 RHIC LOCKED OUT TONIGHT - CHECK SYSTEMS GG OK
ANODES ON TO 200

	2KV	5KV	10KV	15KV	20KV	25KV	28KV	28KV
OF CW	5.564	13.757	27.403	41.055	54.696	68.328	76.526	76.523
OF CE	5.564	13.756	27.401	41.052	54.692	68.326	76.521	76.517
IF CW	5.564	13.757	27.401	41.053	54.692	68.327	76.521	76.518
IF CE	5.549	13.719	27.326	40.940	54.543	68.143	76.352	76.479

10:30 11:05
 $\Delta = 38$

FEES + DAQ OK.

3/13/07 1100 FOUND INNER ANODE DISPLAY WHITE. PROCESSOR
(9006) WAS RUNNING + PRINTING OUT DEBUG STATEMENTS
BUT NOT COMMUNICATING W/ OUTSIDE WORLD. TRY A REBOOT -
NO GO. CYCLE POWER - NO GO. SO, LOOKS LIKE BAD
PROC OR ETHERNET PORT. NEED ACCESS. HAVE ONE SP
PROC.

3/14/07 ACCESS - SWAP 162 PROC FOR INNER ANODE. BOOTS
OK TWICE THEN HANGS ON THIRD BOOT! REPLACE
ETHERNET CABLE + GO TO NEW PORT ON SERVER.
BOOTS OK 3 TIMES - WE'LL SEE - PROBABLY NOT
FIXED!

3/19/07 AFTER WEEKEND - NO BEAM - BOTH INNER + OUTER ARCS
WERE KICK. REBOOT OK

3/20/07 1000 PED RUN 8079001 } USED FOR
PULSER RUN 8079002 } BAD DATA
NO DAQ 1000 FEES
MAY ON FF

3/23/07 0915 CAS IN + ON OVERNIGHT
ON TURNING ON TPC, AUTORAMP PROC DIES IN MIDDLE OF
RAMP.
AFTER I COME IN - RESET ALL + TRY AGAIN - SAME THING
HAPPENS!?

CHAMBER FC CURRENTS: OFCW BISTABLE SHOWS UP

Date: Tue, 13 Mar 2007 11:32:13 -0400
From: Gene Van Buren <gene@bnl.gov>
To: Blair C. Stringfellow <string@physics.purdue.edu>
Cc: Yuri V. Fisyak <fisyak@bnl.gov>, Alexei Lebedev <alebedev@bnl.gov>, Jeff Landgraf <jml@bnl.gov>
Subject: TPC calibration runs

Blair asked me to provide a list of the runs we are requesting for TPC calibration purposes this year. Here's what I have:

- * Gas in the TPC, no beam
- 30k event laser runs, all 5 B field settings:
- + FF and ZF can certainly be done before the run begins
- + RFF (and another ZF) half way through the run when we flip the field for RFF running
- + Perhaps all 5 settings (at least RHF, ZF, HF) at the end of the run.

[This scenario helps with the following: (a) Bill Christie wants to minimize magnet operations while people are preparing / working on the equipment at the experiment, and (b) Yuri wants the field to stay on from the laser run through the physics running because field changes may change TPC-SVT-SSD alignment, so ZF is always done first for each measure.]

* Early low luminosity fill (as requested for the SVT/SSD)
- 250k minbias AuAu200 with +/-30cm vertex cut (useful for some TPC calib checks)

* During run
- 2-3k event laser runs every 3-4 hours
- ~daily gains / bad pads check, update calibs if changed - Yuri, do you and Jeff Landgraf agree on what is a "significant change"?

Comments are welcome. Thanks,
-Gene

23/07 1000] ALSO SEEING SPURRY BEHAVIOR ON
IFCW AGAIN - SEE PAGE 3
BAD SWITCHER?

ALSO HV 20-5 TRIPS - IS CABLE PLUGGED IN?
(THIS IS BAD SECTION) - NEED ACCESS

1400
BILL CHANGES ETHERNET CARD + PORT + KILLS SOME MEDMS.
TRY AUTO RAMPS AGAIN - SEEMS OK. LEAVE AUTORAMP PGM
ON STARGATE, ~~MOVE TEST BITS TO TUTOR.~~ NOT DONE

3/27/07: ON 3/25 INNER ANODES WENT DOWN + WOULDN'T REBO

(AGAIN!). BILL TRIED POWER CYCLING CRATE 52
5 OR 6 TIMES - NO BOOT - PAUSES AT LEADING....

TURN OFF CRATE FOR 1.5 HOURS. I TURN CRATE
ON + IT REBOOTS OK. RUNS OK THROUGH TODAY,
WORK ON IT TOMORROW (ACCESS).

3/28/07: 1400] INNER ANODE PROC REBOOTS OK 3 TIMES.

DECIDE TO LEAVE IT ALONE FOR NOW - WE WOULD
HAVE TO PULL THE CRATE TO REPLACE THE TRANSITION
MODULE.

1415] IFCE CURRENT HAS BEEN UP $\sim 100 \mu\text{A}$ OVER LAST
FEW DAYS - HUMIDITY IS UP. PUT IN $1.5 \text{ M}\Omega$ (WA

	2KV	5KV	10KV	20KV	28KV	28KV
OFW	5.558	13.752	27.395	54.692	76.523	76.519
OFCE	5.558	13.751	27.395	54.687	76.518	76.513
IFW	5.558	13.751	27.396	54.687	76.516	76.513
IFCE	5.536	13.694	27.305	54.583	76.401	76.513
					$\Delta \sim 110$	$\Delta \sim 6$
						15 MIN

1600] RUN PED + PULSER - OK

TRY LASER RUN - 8087063

FIELD OFF

ALEXEI CHANGED FLASH LAMPS ON WEST LASERS
BOTH E+W STILL WORK NIPPY.

4/1/07] CALLED @ 3:30. CHARLIE IN BAD STATE AUTORAMP GO
WHITE, COME IN - CHARLIE REBOOTED, STARGATE REBOOTED
ALL OK. MAYBE ASSOCIATED w/ ORIGINAL DAYLIGHT SAVING
TIME?

4/9/07] 0900. BAD BACKGROUND LAST NIGHT + CREW TRIED TO
RUN TPC - Σ CURRENTS SPIKE UP TO $12 \mu\text{A}$ FOR
 ~ 1 HOUR. ALSO, SEE SPIKES ON IFCE + W !? LOOKS
LIKE CATHODE PS WAS ALSO SAGGING.

REMIND CREWS ABOUT TPC OPS
WILL ALSO LOWER SC ALARMS AND STAND ALONE ALARMS

Σ INNER WAS $10 \mu\text{A}$ HI - LOWER TO $6 \mu\text{A}$

11/0/07 0900 NO GET FC AZARUM (YELLOW)

FIND IFCE HAS GONE UP AGAIN $\Delta \sim 190 \text{ nA}$ FOR 1.5 M Ω IN CHAIN, SO IT'S GONE ABOVE A 2 M Ω SHORT. NEED TO ADJUST Ω TOMORROW

1500 NEXT RAMP WAS $\Delta \sim 100 \text{ nA}$.

4/11/07 0930 ACCESS DAY

REMOVE 1.5 M Ω PUT IN 2 M Ω

	SUKK	10	15	20	25	28	28	28	28
FCW	13.749	27.393	41.044	54.695	68.322	76.514	76.510	76.517	
IFCE	13.748	27.391	41.042	54.680	68.313	76.508	76.509	76.512	
FCW	13.749	27.392	41.043	54.681	68.313	76.508	76.502	76.510	
IFCE	13.673	27.285	40.909	54.510	68.129	76.362	76.545	76.549	
						$\Delta = -150$	$\Delta = +40$	$\Delta = +39$	$\Delta = +37$

11/07 1400 TPC LASER CALIB RUNS — NO \vec{B} FIELD
AL ALIGNS LASERS

8101056 TPC LOCAL CLOCK PED

8101057 TPC " " LASER 3 KEV

8101058 TPC " " LASER

TURN OFF TPC

11/6/07 IFCE EXCESS UP TO $\sim 100 \text{ nA}$. NEED TO GO TO 2.5 M Ω .
WAIT FOR ACCESS

→ ALSO SINCE ACCESS DAY ON 4/11/07 OFCW HAS BEEN STABLE AT NORMAL VALUE!? THIS OVER 6-7 RUNS OVER WEEKEND.

4/19/07 OFCW STARTED UP AGAIN.
ALSO, IFCE Δ HAS APPROXIMATED (REACHED) 200 nA \rightarrow THE 'FULL 3 M Ω . IF IT GOES ABOVE THIS, THEN?

1000 GET ACCESS — PUT IN 2.5 M Ω . I'M AFRAID TO PUT IN FULL 3 M Ω ON SHORT ACCESS — WORRIED ABOUT SPARK GAPS, WAIT FOR 3 UNTIL NEXT MAINT DAY.

14

	5KV	10KV	15KV	20KV	28KV
OFCW	13.760	27.406	41.086	54.696	76.533
OFCE	13.758	27.401	41.054	54.681	76.521
IFCW	13.759	27.402	41.054	54.692	76.522
IFCE	13.667	27.268	40.952	54.629	76.411

$A = 110^\circ$

4/20/07 1130 AT ~1020 THIS MORNING, IFCE EXCESS HIT ~110 mA. THAT WOULD BE THE FULL 3 MOHM SHORT. I HAVEN'T SEEN IT GO OVER YET.

Date: Sun, 22 Apr 2007 08:54:03 -0400 (EDT)

From: Blair C. Stringfellow <string@physics.purdue.edu>

To: Howard Wieman <hhwieman@lbl.gov>, Jim Thomas <jhthomas@lbl.gov>, gene@bnl.gov,

Alexei Lebedev <alebedev@bnl.gov>, Wayne Betts <wbetts@bnl.gov>,

Bill Christie <christie@bnl.gov>, witt@bnl.gov

Subject: uh oh

Hi - Gene has been watching the excess current in IFCE and, unfortunately, it has definitely gone over 3 Mohm equivalent. (Also confirmed by me in the slow controls archive). To remind everyone, during the "fix" of the IFCE permanent short, 2 stripes were shorted together and the gaps on either side got 3 Mohm instead of 2. Ever since then (2 years ago) we have seen a slowly growing excess current, which was thought to be due to an epoxy bridge over one of the 3 Mohm gaps. As this current has gone up we have compensated by putting a resistor at the end of the chain (currently 2.5 Mohm). However, the excess current has now gone above what we expect for a completely shorted 3 Mohm. (As high as 3.25, so it's not just noise.)

So.... back to the drawing board. I'm stumped - any and all theories now welcome. Wednesday is an access day, so I will switch the inputs to the termination box just to confirm that this is really coming from the chamber itself (I believe I've done this before...).

4/27/07 0920 SINCE THE ABOVE EPISODES, EXCESS HAS STAYED AROUND THE 2.5 M Ω LEVEL ALL WEEKENDS.

12/07 0930 ACCESS DAY

1. CYCLE POWER ON INNER ANODE LEAD (BAD STATUS)
2. REBOOT CHAPLIN - UPDATES
3. PLATFORM HYGROMETER WAS OFF - TURN ON

HECU → 4. GLASSMAN CURRENT KNOBS SET TO 1.2 MA

SWITCH IS SET TO CURRENT TRIP NOT CURRENT LIMIT

→ 5. CHECKED THAT IFCE PROBLEM STAYS WITH CHAMBER WHEN SWITCH CABLES AT TERMINATION BOX. ALSO DECIDE TO LEAVE EXT RESISTOR = 2.5 MΩ.

19/07 0930 ACCESS DAY

1. CYCLE POWER ON INNER MAINFRAME - BAD STATUS
2. REMOVE IFCE 2.5 MΩ PUT IN 3.0 MΩ

	5KV	10KV	15KV	20KV	25KV	28 ¹⁰⁰ KV
FCW	13.749	27.391	41.042	54.682	68.314	76.507
FCE	13.748	27.384	41.039	54.676	68.311	76.504
FCW	13.748	27.384	41.039	54.675	68.309	76.503
FCE	13.635	27.200	40.765	54.412	68.026	70.230

Δ = -27°

→ DECIDE TO STAY WITH 2.5 MΩ. GAS SYS PROBLEMS PRECLUDE FURTHER TESTING

Hi - we had yet another VME processor disconnect from the network this morning. This time it was the processor that reads the gas data and the platform hygrometer. It happened at ~ 02:45 AM on 5/11/07. The processor is

hdlc.starp.bnl.gov, 130.199.60.161 in Crate 58
Port 9015 on the terminal server.

It shares the crate with the FEE processor.

I logged in at 3:00 and tried to reboot - it hung when trying to access the net. I tried again at 7:30.

Bill W. cycled the power on the crate at ~9:30 but it still didn't boot. (The FEE processor did.)

After that we turned the crate off for 1 hour.

When we turned it back on both processors booted and are now up.

This makes multiple times that we have seen the same failure mode for various processors on the platform and in the DAQ room. Can you please, once again, see if anything was going on with ITD last night (I see today that automatic Windows updates are going on....)

5/13/07 1540) INNER ANODE PROC (9006) GOES OFF NETWORK @

~ 5:30 AM. I REBOOT AT 9, BUT NO GO. I TURN OFF CRATE FOR 40 MIN + TRY AGAIN. IT BOOTS W/ STOPS + ST BUT AFTER IT'S UP IT DROPS OFF NET AGAIN (W/ IT'S DISPLAY). WE TURN OFF CRATE UNTIL 15:30 - TURN ON, NO BOOT. HAVE ASKED FOR ACCESS TO REPLACE PROC.

1600) BILL REBOOTS AUTORAMP PROC (STARGATE) + 9006 THEN REBOOTS SMOOTHLY!? WE UNDERSTAND NOTHING! CANCEL A + DO NOT REPLACE PROC FOR NOW.

1630) GET ACCESS - REPLACE PROC - IT BOOTS OK BUT BY THE TIME WE GET BACK OUT IT'S OFF THE NETWORK + ALL WHITE GUI

5/14/07 0900) INNER ANODE PROC COMES + GOES. FINALLY WE TURN OFF CRATE + RUN ALL NIGHT W/ LECROY SERIAL SESSION. ALSO, FEE PROC ACTING FUNNY - SLOW TO DISPLAY ST ALSO, NOTE IN LOG THAT GG PROC DROPS OUT, BUT I FIND NO EVIDENCE.
TEMP IN HALL = 84.5° ON HYGROMETER.

5/14/07 1100) GET ANOTHER ACCESS - PUT ORIGINAL PROC BACK MOVE ETHERNET CABLE FROM SMALL SATELLITE BOX TO MAIN SERVER - SAME BLUE CABLE, IT BOOTS BUT TIMES OUT LOADING SOME OF THE DB. I WIGGLE ETHERNET CABLE ON BACK OF CRATE - BOOTS OK. (DO THIS TWICE).

→ FEE PROC ALSO COMING + GOING ON NETWORK. ALSO PUT FAN ON SERVER + OPEN REAR DOOR OF PULL OFF PLASTIC FRONT PANELS. - EXIT

1330) BEAM - INNER ANODES STILL OK - USE AUTORAMP

5/16/07 REBOOT FEE PROC - COMES UP W/ DB CHECK EVERYWHERE SINGLE OFF BUTTON TURNS OFF 6 SUPPLIES!? BUT SINGLE ON BU THEN TURNS ON ONE SUPPLY. CLEAR ALL DB CHECKS + LEA FOR NOW

5/17/07) GET ACCESS FOR SSD CRATE PROBLEM. IN FIXING THAT CANBUS REBOOTS TWICE + CAUSES INNER ANODES TO BOOT. IT COMES UP BOTH TIMES. ALSO, FC PROC IS HUNG (MAYBE DUE TO CANBUS ALSO) + I REBOOT IT.

TAKE BEAM OFF LASER RUN FOR GENE :

8137034 PED LOCAL CLOCK
→ 8137035 LASER, LOCAL CLOCK - MAG ON NO BEAM

5/19/07) INNER ANODES GO OFF NETWORK @ ~ 6:40

5/21/07) GOT ACCESS YESTERDAY FOR 20 MIN. FIND INNER ANODE PROBLEM WAS PROBABLY DUE TO TRANSISTION MODULE CONNECTION - TRANSCIEVER WAS TIE-WRAPPED ON + SKEWING CONNECTION - ALSO, CLIP FROM BOTTOM CONNECTOR WAS UP + INTERFERING w/ TRANSCIEVER. CUT THE WRAP, MOVE CLIP, RESEAT TRANSCIEVER. NEED LONGER ACCESS TO REPLACE TRANSISTION MODULE - THE ONE THAT'S IN HAS NO CLIP FOR THE TRANSCIEVER.

5/21/07) INNER ANODES ON ALL NIGHT.

5/23/07) ACCESS: 1. SLIDE INNER ANODE ^{UME} CRATE OUT + REPLACE TRANSISTION MODULE - THE NEW ONE HAS A CLIP FOR THE TRANSCIEVER. BOOTS ON 3 TIMES
2. CYCLE POWER ON INNER LECROY
3. TEST FC - MEASURE EXT RESISTOR = 2.507

1100) WITH 2.5 IN STARTS @ ~ -90 AFTER ~ 30 MIN Δ ~ +80
TRY 3.0 AGAIN = 3.010

	5KV	10KV	15KV	20KV	25KV	28KV	28KV
FCW	13.749	27.399	41.046	54.683	68.322	76.518	
FCĒ	13.743	27.391	41.043	54.681	68.317	76.513	
FLW	13.747	27.390	41.041	54.680	68.315	76.511	
FCĒ	13.675	27.330	40.959	54.571	68.229	76.381	76.469

11:15 12:05
Δ -120 = -40

LEAVE 3.0 IN.

5/23/07) AFTER MAGNET RAMP LOSE ROD 17-2 MATR OUT

MAGNET POL REVERSED A \rightarrow B

5/24/07 0900 ALEXEI DOES NO BEAM LASER RUN - EAST
 LASER LOOS ~ WEATHER - MAGNET REVERSAL AFFECTS AC
 8144001 - PED LOCAL CLOCK
 8144002 - LASER 9200 EVENTS
 NO BEAM, MAG ON
 STOPPED BY MAGNET TRIP

1000 NOTICED IN LAST NIGHTS RUN WITH MAG ON + POL
 OFCE + OFCW WERE CONSISTENTLY 10-20 mA BIGGER THAN
 IFCW. NORMALLY ALL ARE ~ EQUAL.

6(1/07) 1100 YESTERDAY'S ABORT (MORNING) TRIPPED CATHODE PS
 RESET AT ~ 3:00 PM FOR NEW STORE
 BAD THUNDERSTORMS OVER NIGHT - STAR SURVIVED W
 TRIPS
 BUT, RUN THIS MORNING SHOWS CATHODE CURRENT
 (FC) HAS SHIFTED DOWN BY 20-30 mA.
 - IN FACT IT SHOWS A SLOPE DOWNWARD + IS STILL
 DROPPING (OVER LAST HOUR).
 DEW POINT IN HALL UP TO 57.11

	28KV	
OF CW	76.551 - START IS ON	3 M Ω IN IFCE
OF CE	76.469	GLASSMAN READS 27,962 \pm .005
IF CW	76.463	I = .304 mA
IF CE	76.361	
	-33.33	<u>1400</u> CURRENT CONTINUES TO DROP
	-177.35	+ WITH DEW POINT GOES STRAIGHT UP
	-33.77	NOW ~ 60° AT END OF RUN, CURRENT
	-177.68	ALL DOWN ~ 100 mA
	-23.69	THIS WOULD \Rightarrow GLASSMAN CHANGE OF 3
	-177.363	
	-23.664	GET ACCESS - RESET BANANA PLOUS @
	-176.959	KEITHLEY - CYCLE POWER ON KEITHLEY +
		GLASSMAN, ONE DE-HUMIDIFIER PS
		IN HALL, MCW RAISED TO 64°

6/5/07 1130 IFC CURRENT CONTINUE TO DRIFT WITH DEW PT
 IN HALL. TODAY DEW POINT UP TO ~ 60 + CURRENT
 DOWN TO 76.28. NEED A DRY DAY TO SEE IF CURRENTS
 WILL GO BACK TO NORMAL.

6/5/07) ALSO, CRATE 59 (OUTER ANODES) HAS TURNED ITSELF OFF 3 TIMES YESTERDAY. FAN TRAY SAYS +12V UNDER VOLTAGE. LEAVE OFF 'TIL ACCESS + RUN OUTERS WITH SERIAL SESSION.

6/6/07) HUMIDITY DROPS OVERNIGHT - FC CURRENTS BACK TO NORMAL

6/6/07) ACCESS

→ 0. SWITCH BACK TO OLD DVM TO FINISH RUN ←

1. REPLACE POWER SUPPLY + FAN TRAY FOR CRATE 59 (OUTER ANODES), LEAVE ON

2. CYCLE POWER ON INNER + OUTER LEEROYS - BAD STATUS

3. CHECK - SWITCHED FOR FC HAS FAN UNDER IT + HEAT EXCHANGER.

	10KV	20KV	28KV	POWER CYCLE + REBOOT / 10	20KV	28KV	OLD DVM / 10KV	20KV	28KV
OFFW	27.319	54.739 ←	76.595	27.419	54.739 ←	76.537	27.415	54.738	76.592
OFFE	27.399	54.687 ←	76.529	27.395	54.688	76.522	27.392	54.687	76.518
IFCW	27.396	54.738 ←	76.515	27.394	54.685	76.517	27.392	54.686	76.521
IFCE	27.208	54.677	76.314	27.256	54.533	76.313	27.258	54.563	76.295

→ AL REPLACES FLASH LAMPS ON EAST LASER

500 RUN 815 7053 LASER LOCAL CHECK

6/7/07) CALLED @ 1900 - OUTER CRATE TURNED ITSELF OFF AGAIN! LEAVE OFF + GO WITH LEADY SERIAL SESSION AGAIN.

6/8/07) 1000) CANBUS NEEDS TO BE REBOOTED. AFTER REBOOT, OUTER ANODE CRATE TURNS BACK ON, STAYS ON FOR ~ 2.5 HOURS + GOES OFF AGAIN. FRONT SAYS +12V OVERVOLTAGE THIS TIME. YOUNI CONFIGURES NEW 162 FOR SWAP - NEED ACCESS ARCNET AND DOES NOT USE +12V.

6/8/07) 1500) 6 X 6 BUNCH RUN

6/10/07) 1400) CALLED ABOUT 24-5 ANODE - TRIPPED 3 TIMES ONCE ON RAMP UP. HISTORY SHOWS ~ 10 TRIPS / RUN.

ORC CURRENT = -.061. DECLAN SAYS DC CURRENT AT FULL VOLTAGE ≈ .050, HIGHER THAN OTHERS, NO OTHER CALLS.

20

6/12/07 } 1130 SWAP IN NEW 162 FOR OUTER ANODES - TESTS ON.
WE'LL SEE IF CRATE STAYS ON

6/12/07 } 1330 TONKO HERE - TRY + SWAP OUT RECEIVER 3-7
HAD GONE BAD ON SUNDAY.

SET UP FOR LONG LASER RUN AT THIS MAGNET POL
- NO BEAM, MAG ON FULL

RUN 816 3043 PED LOCAL CLOCK
RUN 816 3044 - NOT ALIGNED LASER
3045 LASER 30K EVENTS

1530 MEASURE THE DELAY FROM TRIG IN TO GG CONTROL
UNTIL MON OUT STARTS TO RISE \approx 250 MSEC.
NEED TO MEASURE HV OUT

6/13/07 } 0930 OUTER ANODES STILL UP - TAG OLD 162 AS BAD.
ALSO, 24-5 TRIMMED TWICE AGAIN LAST NIGHT, ONCE
RAMP UP

6/26/07 } END OF RUN. DO LASER RUN - REMOVE EXT RESIST
IN IFCE. MAG ON. NEW POINT IN HAZL 60.5

RUN 8177062 PED LOCAL CLOCK
RUN 8177063 LASER LOCAL CLOCK

NOTE THAT 12 O'CLOCK RAFT ON EAST IS NOT
THERE.

	28 kV	
OF CW	76.072	} NEW AT = 60.59%
OF CE	76.067	
IF CW	76.062	
IF CE	76.663	

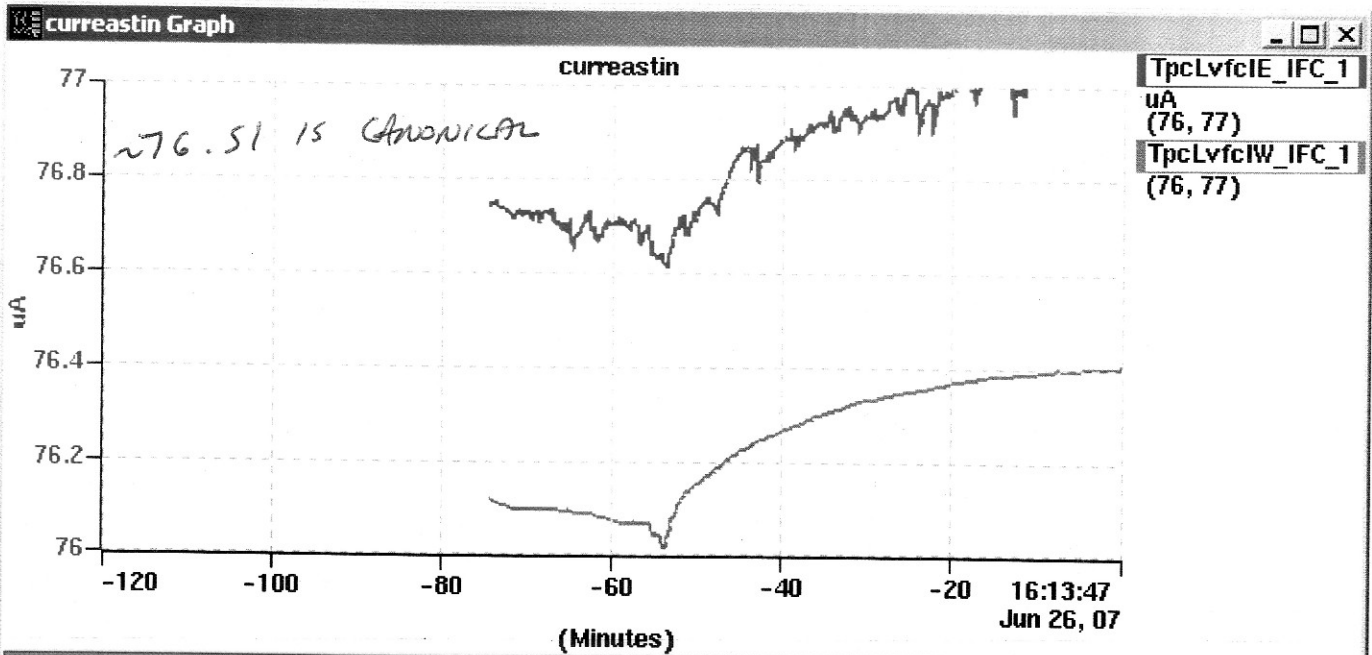
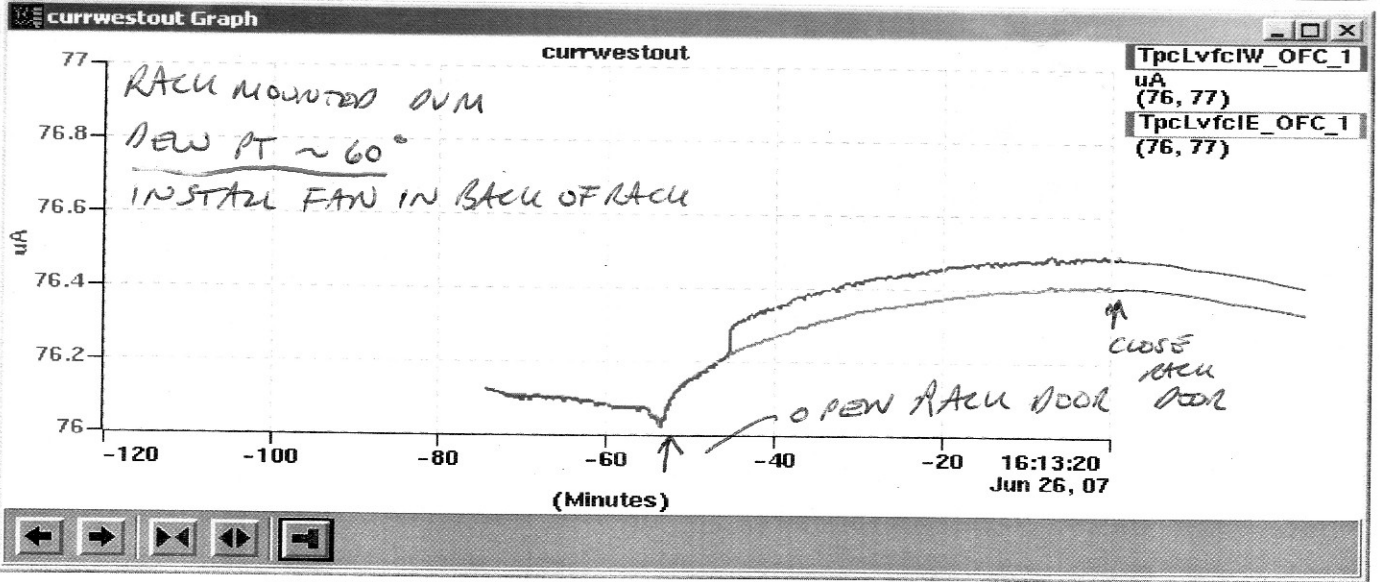
6/26/07 1400 REMEASURE GG DELAY + RISE TIME -

USE BREAK OUT BOX IN BACK TO SEE REAL V.
USE 10X PROBE, 10MSL TERMINATION

WITH CHAMBER CABLE NOT ATTACHED



6/26/07



6/29/07 LASER TRIGGER - AT END OF RUN TPC LASER

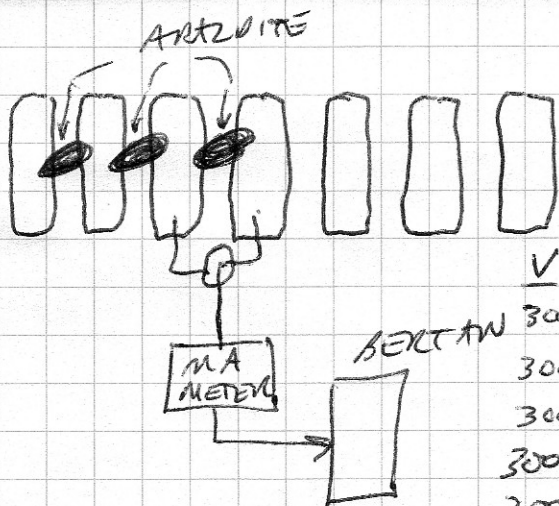
TRIGGER QUIT. AL GOT ACCESS + SWAPPED THE TCD INPUT FOR LASER FTTC \Rightarrow TPC + TPC LASER TRIG WAS OK.

TODAY WE LOOK AT SIGNALS + FIND NOTHING W/ ALL SIGS LOOK OK.

\Rightarrow MYSTERY FOR RUN 8.

7/2/07 TEST OF FC SAMPLE. ALEXEI BRIDGES 3 GAPS WITH SILVER EPOXY + 3 μ g ANALDITE.

SET UP TO MEASURE CURRENT ACROSS GAP



	V	TIME	CURRENT
	300	1400 7/2/07	20 nA
	300	1600	50 nA
	300	0900 7/3	104 nA
	300	1400	95 nA
	300	1030 7/5	316 nA
	300	1430 7/5	320 nA
	300	0830 7/6	304 nA
	300	1100 7/6	320 nA
HUMIDITY HI	{ 300	1030 7/10	440 nA
	{ 700	1030 7/11	480 nA
HUMIDITY DOWN	300	7300 7/12	322 nA
		1000 7/13	329 nA
		1500 7/16	434 nA

7/16/07 MOVE TO A GAP WITH NO EPOXY BRIDGE - STILL GET \sim 430 nA \Rightarrow SURFACE EFFECT?

7/19/07 TO DO FOR RUN 8:

1. STAND ALONE ALARM HANDLER - GET TO RUN ON ANOTHER COMPUTER BESIDES SIRIUS - PETER K?
2. CHECK REPAIRED VME PROC - INVENTORY SPARES

Date: Fri, 20 Jul 2007 16:38:58 +0200
 From: Tonko A. Ljubicic <tonko@bnl.gov>
 To: Blair C. Stringfellow <string@physics.purdue.edu>
 Cc: Jeff Landgraf <jml@bnl.gov>, gene@bnl.gov
 Subject: RE: more questions

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- TO DO
 →
1. We have a tcd and promised space in the crate.
 2. We'll need to OR the GG. The timing is the same to a clock. TPX will also need a copy of the laser diode pulse. The pulser-out can stay from the TPC.
 3. No need to change the gain of the wires. New electronics is better but the single sector test with tracking will be the final test of this.

Tonko

3. TEST OUT GPIB VME MODULE

10/1/07 } START OF RUN 8

TEST FC IFC BLOWER ON, TEMP = ?

COME IN SVT, SSD OUT

IFCE REPAIRED OVER SUMMER

NO EXT RESISTOR IN 20KV

	2KV	5KV	10KV	15KV	20KV	25KV	20KV	25KV	28KV
OFCW	5.554	13.748	27.394	41.047	54.685	68.411	54.754	68.410	
OFCF	5.554	13.747	27.393	41.045	54.684	68.318	54.681	68.316	
IFCW	5.553	13.746	27.390	41.041	54.677	68.687	54.975	68.685	
IFCF	5.554	13.747	27.391	41.043	54.691	68.316	54.677	68.313	
						$\Delta = 311$	$\Delta = 300$	$\Delta = 372$	

1KV $\Delta = 15$ mA

2KV $\Delta = 30$ mA

SEE SOMETHING LONG, THIN + SHINY ~ 20cm IN AT ~ 6:00.

1400 } SHINY THING IS A SCRATCH IN STRIPE MATERIAL, NOT THE CAUSE OF SHORT

SCAN w/ PROBE FINDS 1.5 K Ω SHORT AT ~ STRIPE 175. REPRODUCIBLE. NOTHING OBVIOUS - NEED TO REMOVE UPPER MANIFOLD - DIFFICULT BECAUSE OF NEW DESIGN - IT AD TO BE CUT TO GET IT OUT.

CLEAN LOWER HALF FIRST

10/2/07 } 945 AFTER CLEAN, RAISE HV

- 1KV $\Delta = 0$
- 2KV $\Delta = 0$
- 5KV $\Delta = 0$
- 10KV $\Delta = 0$
- 15KV $\Delta = 0$

EMPTY!

	15KV	20KV	25KV	28KV
OFCW	41.119	54.776	68.428	76.637
OFCF	41.063	54.699	68.331	76.526
IFCW	41.060	54.694	68.325	76.519
IFCF	41.061	54.697	68.331	76.522

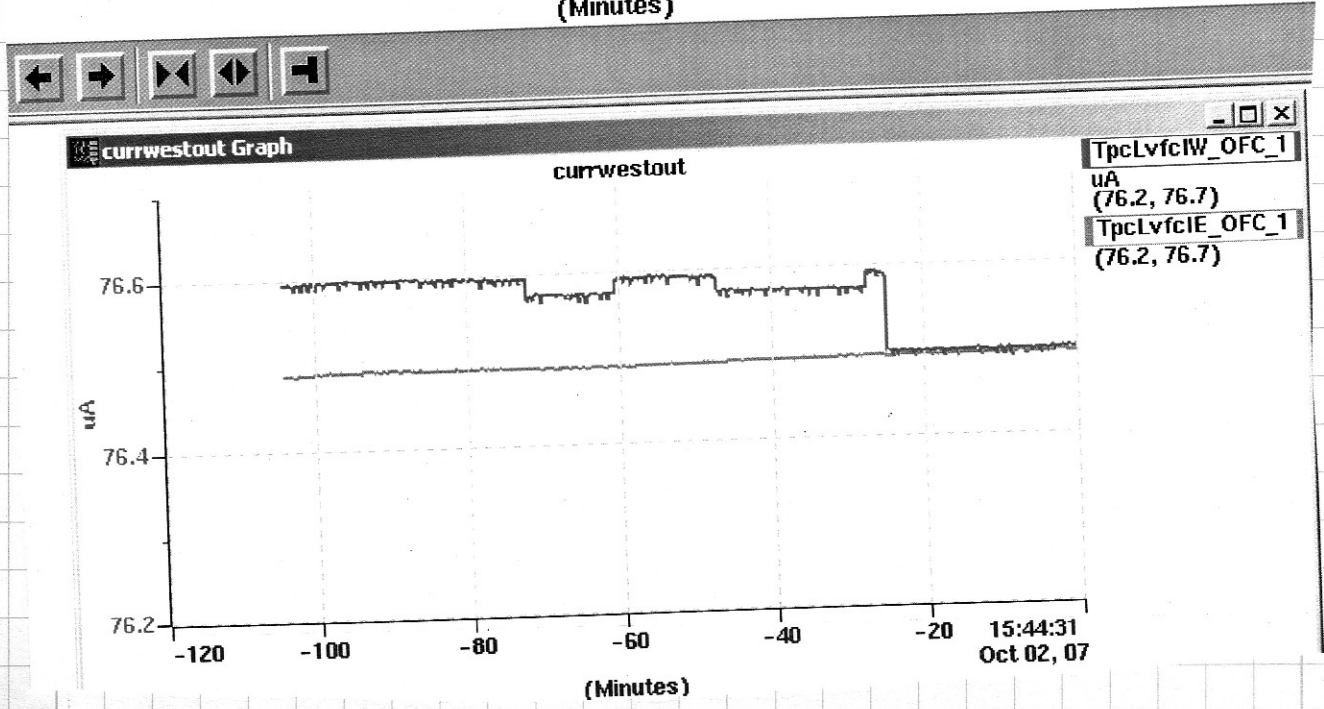
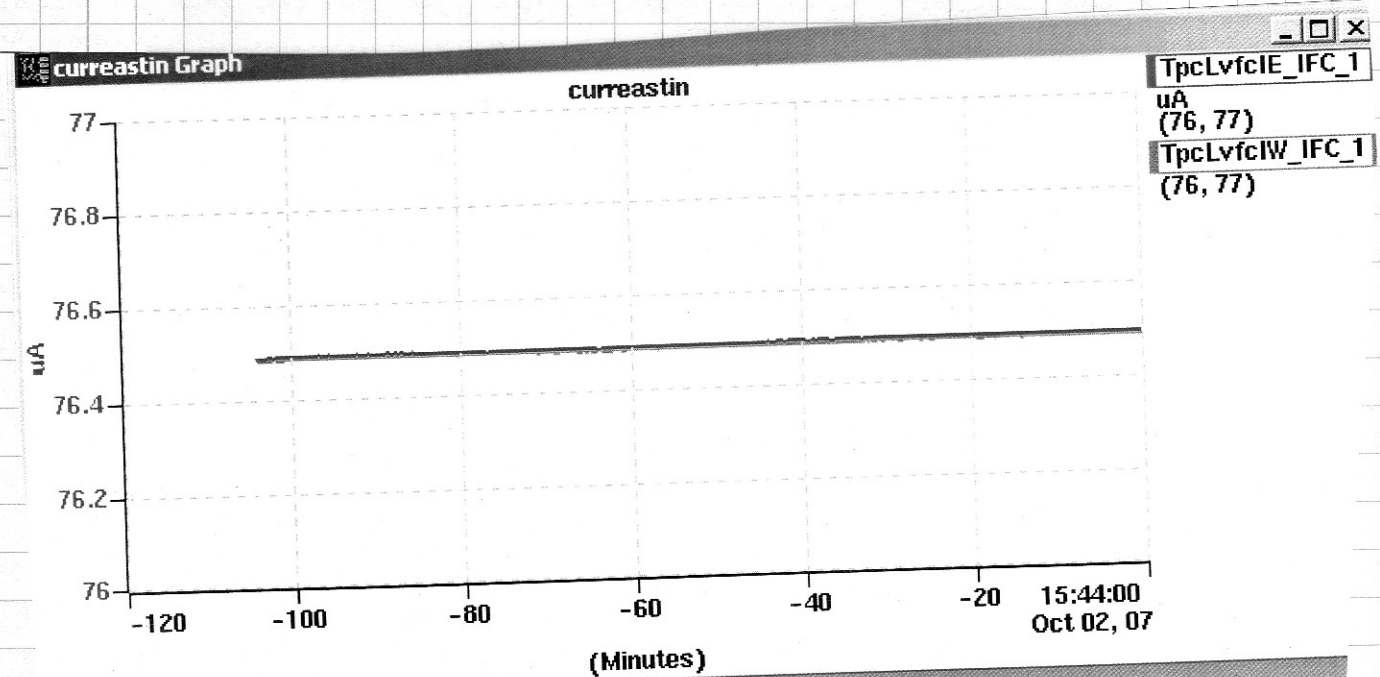
OK AFTER ~ 30 MIN. OFCW IS TRI STABLE 0, $\Delta = 80$, $\Delta = 110$
 RUN HV DOWN + CLEAN + BUTTON UP

10/2/07 1350 AFTER CLEAN, BLOWER BACK ON

TURN OFF

	2KV	5KV	10KV	15KV	20KV	25KV	28KV	28KV
OFCW	5.576	13.767	27.426	41.094	54.744	68.391	76.594	76.497
OFCF	5.576	13.762	27.397	41.038	54.668	68.295	76.445	76.492
IFCW	5.576	13.762	27.394	41.035	54.664	68.290	76.480	76.485
IFCF	5.576	13.762	27.397	41.038	54.667	68.295	76.485	76.491

14:00 15:45



0/3/07) 1100 TESTED NEW SPARE DUAL GPIB MODULE FOR FC READOUT. NEW MODULE IS NOT SAME AS THE ORIGINAL - IT'S "UPDATED". CAN'T GET NEW ONE TO WORK - TRIED SETTING ADDRESS TO SAME AS OLD ONE, BUT NO GO. BILL INVESTIGATING.

0/4/07) CHECK ANDOES + GG
 INNERX OK @ 200V
 OUTERX OK @ 200V
 GG COMES UP ALL GREEN!

0/9/07) CHECK GG CABLE CAP - ALL OK FC OK @ 28KV 1 HR

0/9/07) 1400. TRY SPARE GPIB CONTROLLER FOR FC AGAIN. SET ADDRESS TO 5000. STILL NO GO

TRY SIDE BY SIDE SINGLE BOARDS WITH ONE GPIB CONNECTOR ON EACH. SET ADDRESSES TO 5000 + 5200. NO GO - ONE BOARD SEEMS TO CONNECT, BUT OTHER ONE DOESN'T (SAYS BILL). PUNT AGAIN - CALL NAT'L INSTR? PING EPICS TECH HELP EBAY FOR OLDER MODEL CARD?

0/15/07) 0915 BAD POWER OUTAGE + WATER LEAK @ STAIR OVER WEEKEND. ALL OFF. INCLUDING CANBUS CRATE CHECK ALL SYS:

ALL OK EXCEPT INNER ANDOES HAS VME FAN TRAY PROBLEM.

1130 KEW REPLACES CRATE 52 FAN TRAY - STILL NO GOOD - CRATE TURNS ON OK BUT CANBUS CHAIN WON'T READ FAN SPEED FOR ALL CRATES.

TRY ANOTHER TRAY - GOPS FORGOT TO SET COMM SPEED TO 250 KBAUD. NOW OK

10/17/07 1500 AFTER 5615 CERTIFICATION, TURN ALL
 SYS ON. GG ON ANODES ON TO 200V
 FC 6000 TO 28 KV
 FEE ON

TVC TEMP TURNED ON - NOT BEING READ BY
 SLOW CONTROLS - NEED TO CHECK.

10/18/07 1000 SCAFFOLD DOWN ON WEST SIDE

FEEs ON
 FC ON 76.384
 76.379
 76.383
 76.390

10/19/07 MEASURE V_{IP} ON SECTOR 17 R00'S FOR 4PUR

R10 1 3.83V
 2 3.85V
 3 3.83V
 4 3.86V
 5 3.84V
 6 3.86V

1100 WEST POLE TIP IS IN CHECK FEEs - ON
 CHECK FC - HUMIDITY IN HALL IS HIGH

75.123 NOMINAL IS 76.5!
 75.122 HALL TEMP 76
 75.182 RH 58%
 75.213 DP 61 BACK AIR

HANDLER NO
 WORKING,

EVDT
 EVBL

10/22/07 RH DOWN TO 43 DP = 59 TRY FC AGAIN

2KV	10KV	20KV	28KV	10:30
	27.418	54.700	76.613	BISTABLE ON FOR 20 MIN
	27.418	54.700	76.527	
	27.416	54.697	76.521	
	27.417	54.701	76.524	

10/24/07) EAST POLE TIP STILL OUT - CHECK FC
 76.571, 76.478, 76.473, 76.478

10/25/07 1000) TEST LASER TRIGGER WITH TPX
 RUNS w/ TPC @ 10 HZ - NO GAS IN CHAMBER
 BUT PIN DIODE IN WORKS FOR TPX.

10/31/07 1000 CHECK FC

10KV	20KV	28KV	
27.436	54.732	76.556	COOL FOR 1/2 HOUR
27.437	54.726	76.557	
27.436	54.726	76.553	
27.437	54.725	76.557	

11/7/07 1600 CHECK FC - E+W PT HAVE BEEN ON @ 1/2 FIELD
 28KV 76.554, 76.553, 76.553, 76.552

11/8/07 1430 MAGNET GOING TO HALF FIELD ON MAIN - NO TRIM
 NO POLE TIP

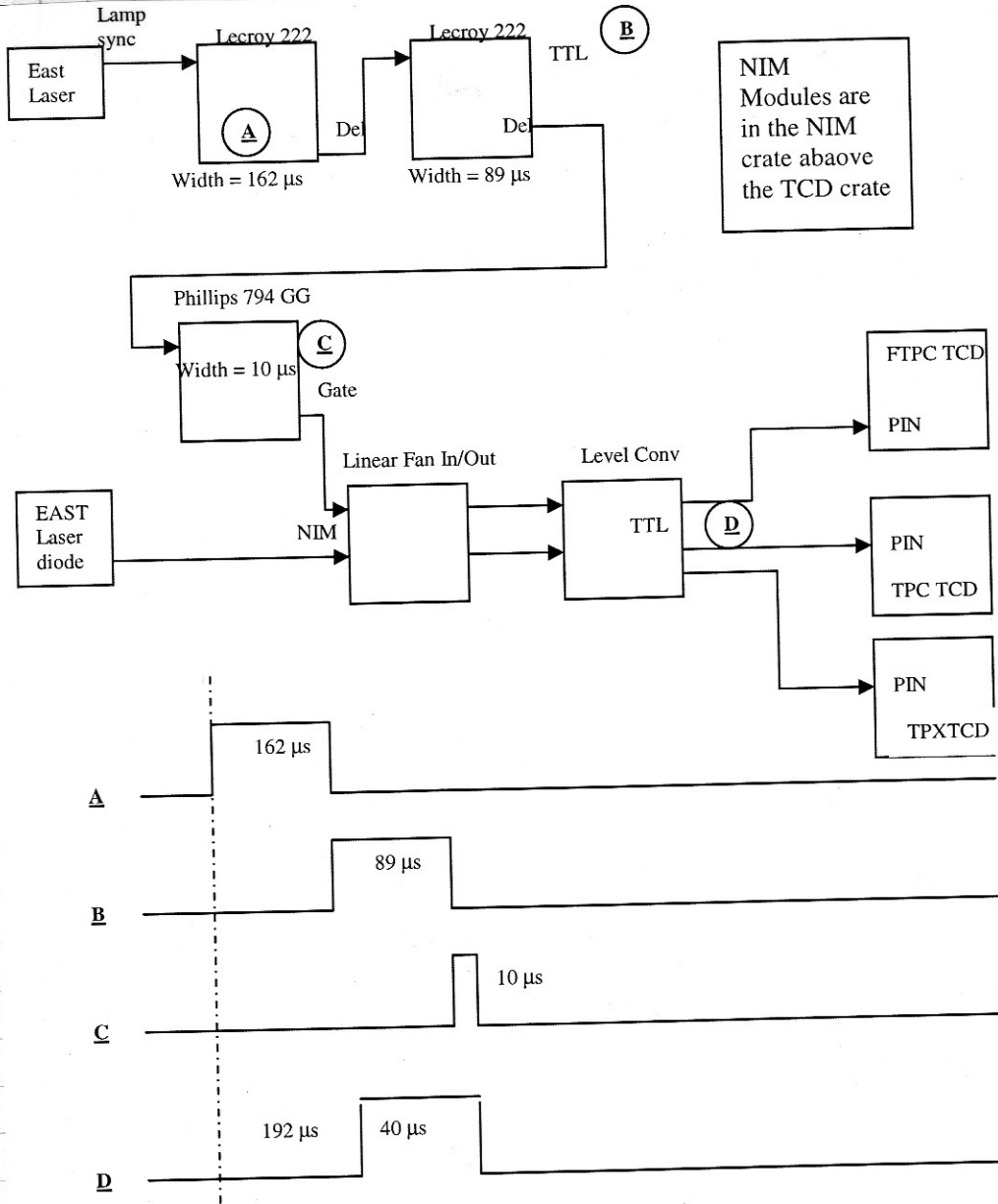
10KV	20KV	28KV	ON FOR 5 MIN	GO TO FULL MAIN	5 MIN ON		
27.428	54.718	76.552	ON FOR 5 MIN	10KV	20KV	28KV	5 MIN ON
27.426	54.716	76.546		27.428	54.718	76.554	
27.426	54.717	76.545		27.425	54.717	76.546	
27.428	54.718	76.547		27.428	54.717	76.543	
				27.429	54.715	76.546	

11/9/07 9:55 MAGNET TESTS DONE - BBCS GOING UP

10KV	20KV	28KV	
27.431	54.719	76.552	ON FOR AN HOUR
27.430	54.719	76.546	
27.430	54.718	76.544	
27.432	54.719	76.544	

11/14/07 TEST FC ON FOR 1/2 HOUR

2KV	10KV	20KV	28KV
5.879	27.441	54.733	76.562
5.879	27.438	54.728	76.552
5.879	27.438	54.727	76.554
5.879	27.439	54.727	76.554



NIM Modules are in the NIM crate above the TCD crate

TPX added 10/20/2007

ORIGINAL SCHEMA - PAGE 69, NOTEBOOK 1

Rewiring of special laser trigger for TPC and FTPC. (See page 29 of 2000 logbook for original version.) The purpose of this hard wired trigger request is to avoid the inherent 100 msec deadtime which would occur if the trigger request went through the TCD. (Laser rate ~ 10 Hz). The current version adds fanouts to make the FTPC identical to the TPC. I have also added a "safety" pulse to the diode line - if the diode fails to fire, this safety pulse will trigger the system anyway. This gives an empty event but avoids the VERY long DAQ timeout. With no gas in the chamber, Tonko and I tested this setup (for the TPC only.) We started a run with the laser off and got no triggers. We then powered on the laser and the system took data. We then powered off the laser and the system stopped. This theoretically means we can turn on the laser during a physics run and interleave laser events without stopping. Note that BOTH TPC and FTPC trigger no matter where the beams are steered. They are sharing the same laser, but the beam steering comes after the lamp sync and diode signals.

15/07 ^{Test} AFTER MAGNET FAILURE LAST NIGHT
 : 5:00am ~10:00 after 30' ~10:30

2 KV	10 KV	20 KV	28 KV	28 KV
5.590	27.431	54.711	76.524	76.536
5.590	27.431	54.709	76.524	76.528
5.590	27.432	54.712	76.526	76.531
5.591	27.432	54.712	76.525	76.529

19/07 4:40pm Magnet was switched on
 after ~30' 5:15 pm

2 KV	10KV	20KV	28KV	28KV
5.591	27.422	54.714	76.548	76.546
5.591	27.419	54.713	76.540	76.538
5.588	27.418	54.714	76.542	76.537
5.591	27.420	54.714	76.540	76.540

21/07) 0930 DISCOVER INTERLOCK FOR OUTER LEAD MAINFRAME
 DOESN'T WORK! WE DROPPED THE PERMISSIVE YESTERDAY
 TO PUT AIR IN CHAMBER, BUT OUTER HV STAYED ON.
 THIS IS THE SAME CRATE THAT WAS SENT BACK FOR
 KEV AIR LAST YEAR.
 SWAP IN THE MED POWER CRATE AS SPARE.
 INTERLOCK WORKS OK.

23/07) ISIS GAS SYS UP - STORE IS IN TRY TO TURN ON
 CHAMBER
 TRIP ON 9-6 @ 1200V + 10-8 @ 1390
~~SEE MISSING ADDS IN DATA 10-5, 16-2, OLD BAD PAD FILE~~
 IS IN
 TRIP ON 9-6 @ 1100V - SEE NO CURRENT - DISABLE
 THIS CHANNEL
 TRIP ON 10-8 @ 1390 - DISABLE

SABLY
 LATEL
 BLES
 RECU
 WEN

11/26/07) FILES FOR BAD PAD FILE GENERATION:
 833 0038 PED LOCAL CLOCK
 833 0042 PULSER " "
 11/27/07) INSTALL BAD PAD FILE

11/28/07 ACCESS DAY:

1. FIXED 9-6 + 10-8 ANODE HV - CABLES WEREN'T LAT
2. FIND 24-2 R00 KEEPS TURNING ITSELF OFF -
LOSSES LINK LIGHTS. POWER CYCLE IS NO HELP -
COMES ON + THEN GOES AWAY AFTER ~5 MIN.

SWAP PS ON PLATFORM 24-1 \leftrightarrow 24-2
STAYS WITH THE R00 - MASK IT OUT.

12/5/07 ACCESS DAY

1. REMOVE MVME162 FOR PUSOR FROM CATHODE CR
BECOMES SPARE (WAS NOT USED)
2. INSPECT SVT LECROT MAINFRAME BUT INTERLOCK
CARD TOO HARD TO REMOVE - DECIDE TO SEND THE
CABIN BACK TO VOLTRONICS FOR REPAIR (PG 31)

12/7/07 0900 DURING NIGHT:

1. CREW HAD TO MASK OUT 23-6
2. HV SECTION 24-5 TRIPPED MULTIPLE TIMES
- RAISE SLOWLY TO 1390 - OK.
BASELINE CURRENT = $-0.061 \mu A \Rightarrow$ NOT NORMAL
THIS CHANNEL HAS BEEN FLAKY IN THE PAST
LEAVE ON FOR NOW

12/9/07

{ GET QUICK ACCESS - MOVE 24-5 TO GAIN
CHAMBER OUTPUT (CARD 13, CH ϕ) SEE IF TRIPS
CONTINUE

12/14/07

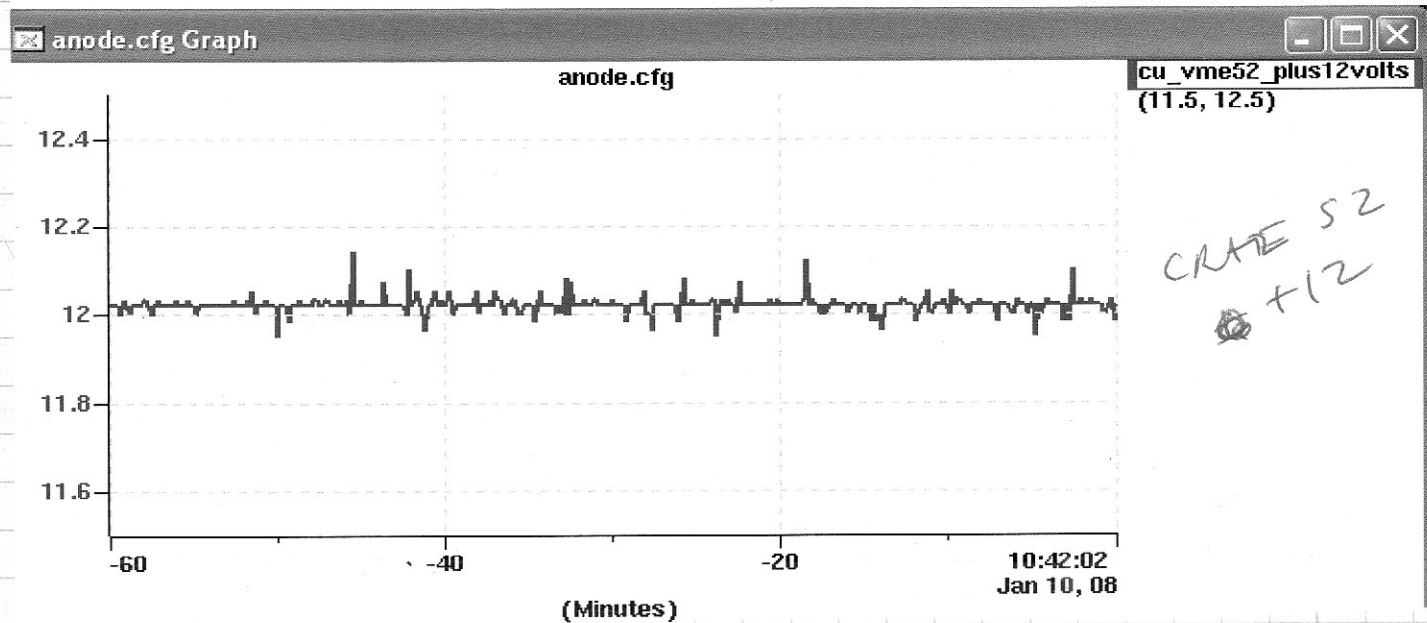
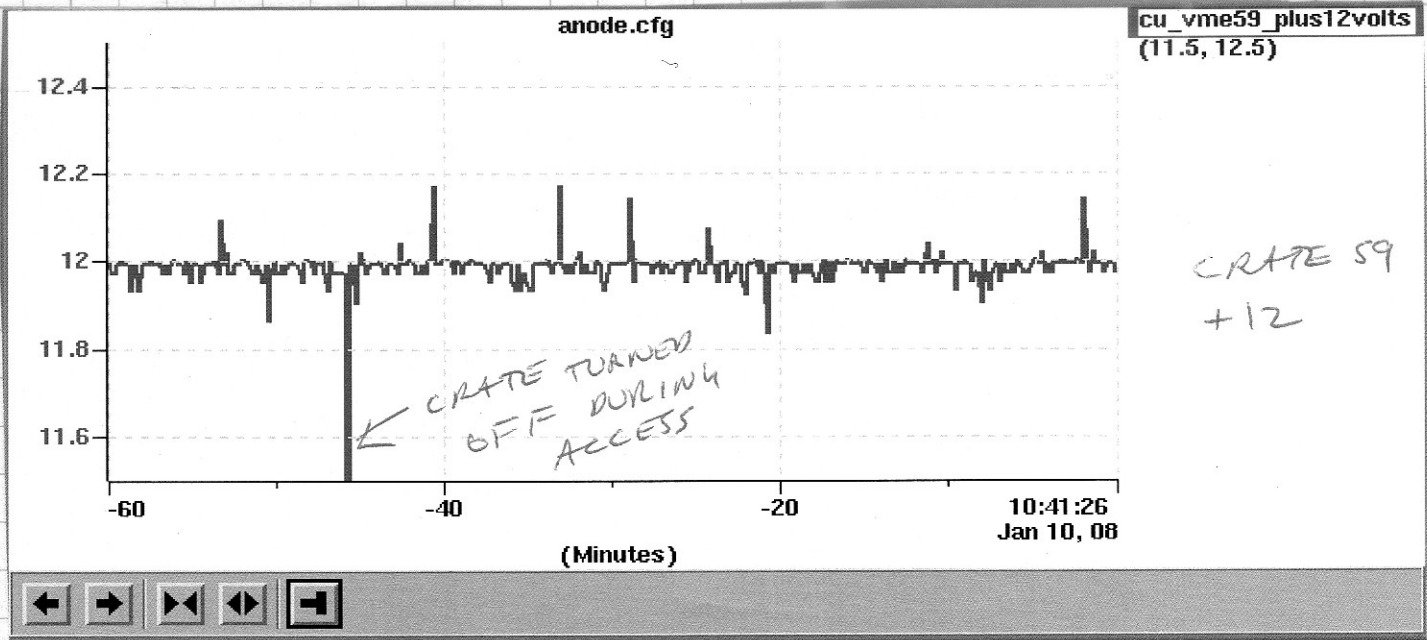
{ 1700 LASER TRIGGER STOPS WORKING
2200 GET ACCESS - ALL NIM ELECTRONICS FOR LASER
TRIGGER WORK OK - ALL SIGNALS INTO TCU LOOK
RUN LASER TRIGGER Y TCU, R00 ONLY - RUNS OK
 \Rightarrow TRIGGER PROBLEM LATER CONFIRMED BY JACK

12/19/07

\rightarrow REPORTS FROM CREW THIS WEEK SAID 24-5
TRIPPED TWICE \Rightarrow IT'S THE CARD, NOT THE CHAMBER
LEAVE LIKE THIS FOR NOW SINCE WE ARE RUNNING.

1000 CHECK THE POLARITY OF THE MACRO INTERLOCK
FOR THE OUTER LECROT MAINFRAME.
CLOSED CONTACT (i.e. 50 Ω) ENABLES THE

- 1/2/2008 0930 ACCESS 1. CYCLE POWER ON OUTER LEAD - WAS IN BAD STATUS - NOW OK.
- 1/7/2008 1600 - OUTER ANODE CRATE 59 KEEPS TURNING OFF WITH THE "ERROR FLAG" SET - BIT 3 ON SC GUI. ONCE LAST WEEK, TWICE LAST NIGHT & TWICE TODAY. GET SPARE FAN TRAY FROM DANNY & WAIT FOR ACCESS. CRATE TURNS BACK ON ON EACH TIME.
- 1/8/2008 0800 STARTED @ 2:30 AM. CRATE 59 WON'T TURN BACK ON. GET ACCESS & REPLACE FAN TRAY - CRATE COMPLAINS ABOUT +12V LOW. NEW FAN TRAY DOESN'T HELP & THEN CANBUS WON'T BOOT! (PROBABLY BAD ADDRESS)
- 1500 DAN + NEW REPLACE CRATE 59 PS - HAD TROUBLE FINDING RIGHT FAN & RIGHT POWER WIRE. PUT ORIGINAL FAN TRAY BACK IN. OUTER PROC REBOOTS OK. CANBUS REBOOTS OK.
- 1240 CRATE TURNS OFF AGAIN - SAME ERROR! TURN BACK ON - TURNS OFF AGAIN AT ~1815. LEAVE OFF & RUN WITH SERIAL SESSION. DAN CONFIRMS THAT PS REMOVED STILL COMPLAINS ABOUT +12V LOW ERROR.
- 1/9/08 1830 GET ACCESS - REPLACE FAN TRAY. CRATE TURNS OFF IN ~10 MINUTES. REPLACE UME PROC (162) CONFIGURED BY YURI FOR OUTER ANODES. CRATE STAYS ON.
- 1/10/08 0900 ONE NOTE IN LOG OVERNIGHT ABOUT OUTER ARCWELT - CRATE? THEN CRATE TURNS OFF AT ~0740. TURNED BACK ON BY OP. GET ACCESS & SET +12V LOWER TRIP FROM 11.7 TO 11.5V (SET BY CONTROLS ON FAN TRAY - SLOW CONTROLS SEEMS NOT TO WORK FOR SETTING LIMITS. ALSO NOTICE THAT +12V IN CRATE 59 VARIES A LOT. SEE STRIP CHARTS



- 1/11/08 CRATE⁵⁹ TRIPPED OFF AT 23:30. LOW VOLTAGE. LEAVE OFF FOR NOW - DAN SUGGESTS ~~LOWERING~~ LOWERING MIN LIMIT TO 11.00V - WAIT FOR ACCESS.
- 1/14/08 (1630) GET ACCESS - SET CRATE 59 +12 LOWER LIMIT TO 11.0V LEAVE CRATE ON FOR TEST
- 1/14/08 CRATE 59 TRIPS AT 22:00 ON ~~LOW~~ +12V OVER VOLTAGE (TRIP LIMIT = 12.6). LEAVE OFF UNTIL ACCESS FROM 0
- 1/16/08 ACCESS - CRATE 59 PLUGGED INTO 2A6-3 TRY 2A7-4 - STILL BAD

1/16/08

1000 REMOVE PROC + ARCONET CARD - STILL BAD

REMOVE TRANSITION MODULE -

ALSO, CAPUT INTO +12V LOWER TRIP LIMIT DOES
NOT WORK.

1/16/08

FINALLY BACK TO NORMAL FOR CRATE 59.

1630

FOUND SMALL SLOW WATER LEAK IN RADIATOR ABOVE
CRATE 59 - DROPS MAY HAVE GONE INTO PS. REPLACE
RADIATOR.1ST SPARE CRATE DRAWS 20 A ON +12V, THEN TRIPS
ON OVERCURRENT - PS SMOKES.MAY HAVE BEEN DUE TO TRANSITION MODULE CONNECTOR
CARD TOUCHING SIDE OF CRATE.GET YET ANOTHER PS FROM DANNY - REPLACE TRANSITION
MODULE CONNECTOR CARD (BLOWN ON BOARD FUSE).

NEW PS + CRATE LOOK GOOD - NO VOLTAGE SPIKES.

BOOT UP WITH REPLACEMENT PROC - OLD PULSER
PROCESSOR (SEE PG 33).

1/17/08

0900 CRATE 59 GOOD ALL NIGHT.

1/28/08

0900 END OF DAY. ACCESS DAY

1. FOUND COOLING FAILURE ON RACK 2B3 - FIND
BLOWER VERY HOT - CALL KEN FOR REPLACEMENT.2. TOMMO PRACTICING WITH TPX FAST RO. UNPLUG GG
+ TURN OFF GG VOLTAGES.

1630

TOOK ALL DAY TO REPLACE - BLOWER WAS FROZEN
BUT ALSO HAD PROBLEMS w/ PRESSURE SWITCH.
2ND PRESSURE SWITCH FINALLY WORKS.

1/27/08

LAST ACCESS

1. INVESTIGATE TPX LVPS #6 - HAD TROUBLE 2 DAYS
AGO TURNING ON - KEPT OSCILLATING ON/OFF REPLACED2. CREW REPORTS SC ALARMS DIDN'T WORK FOR
ANODE TRIPS - CHECKED ON

YURI WHATS GG PROC REPORTED

1325

3/7/08) HIGH RATE TX STUDIES

LONG RUN = 76

1. 650 HZ INNER Σ = 8 μ A
 OUTER Σ \sim 2 μ A

2. 1350 HZ INNER Σ = 14 μ A
 OUTER Σ = 4 μ A

3. 2 KHZ INNER Σ = 20 μ A
 OUTER Σ = 6 μ A

