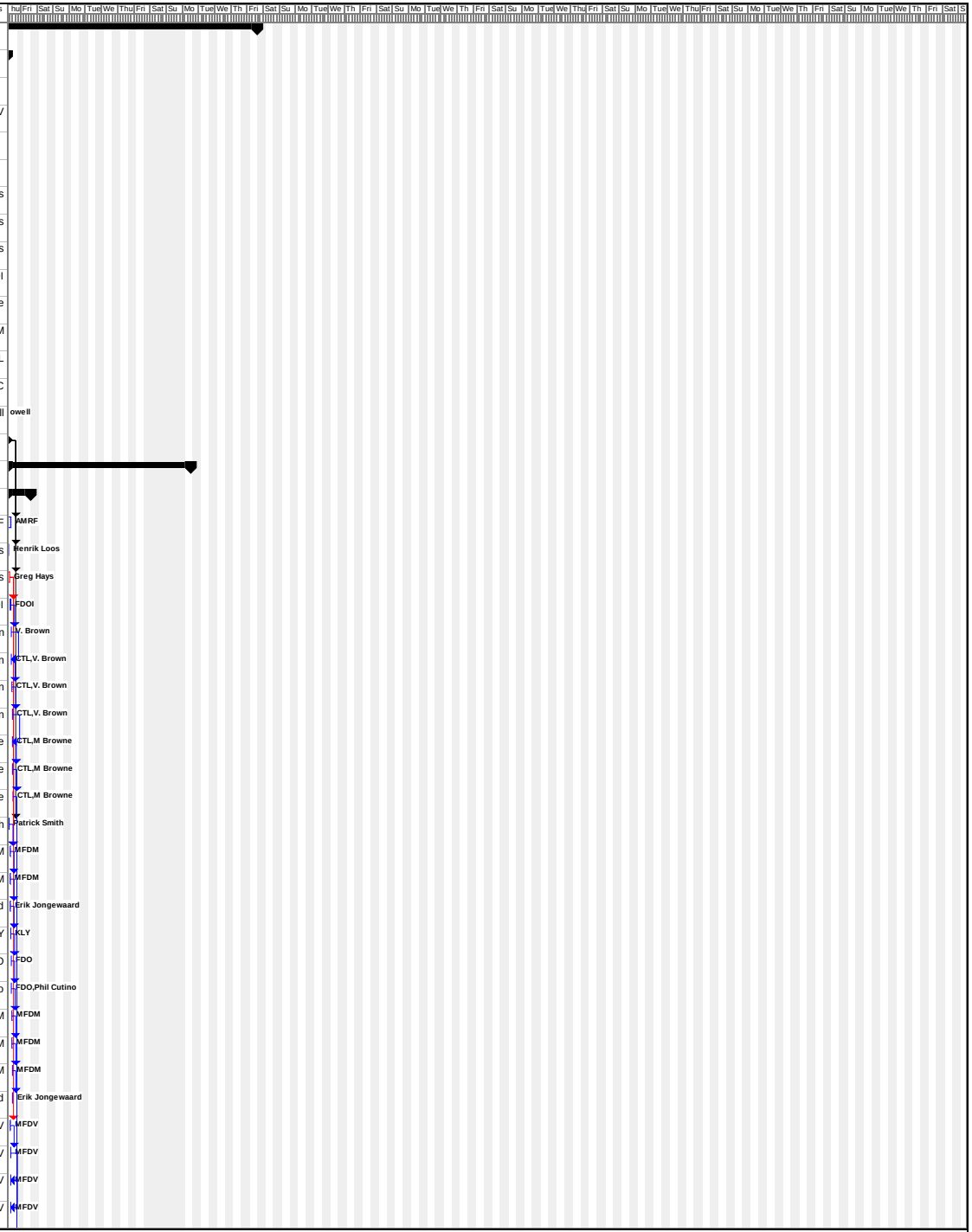
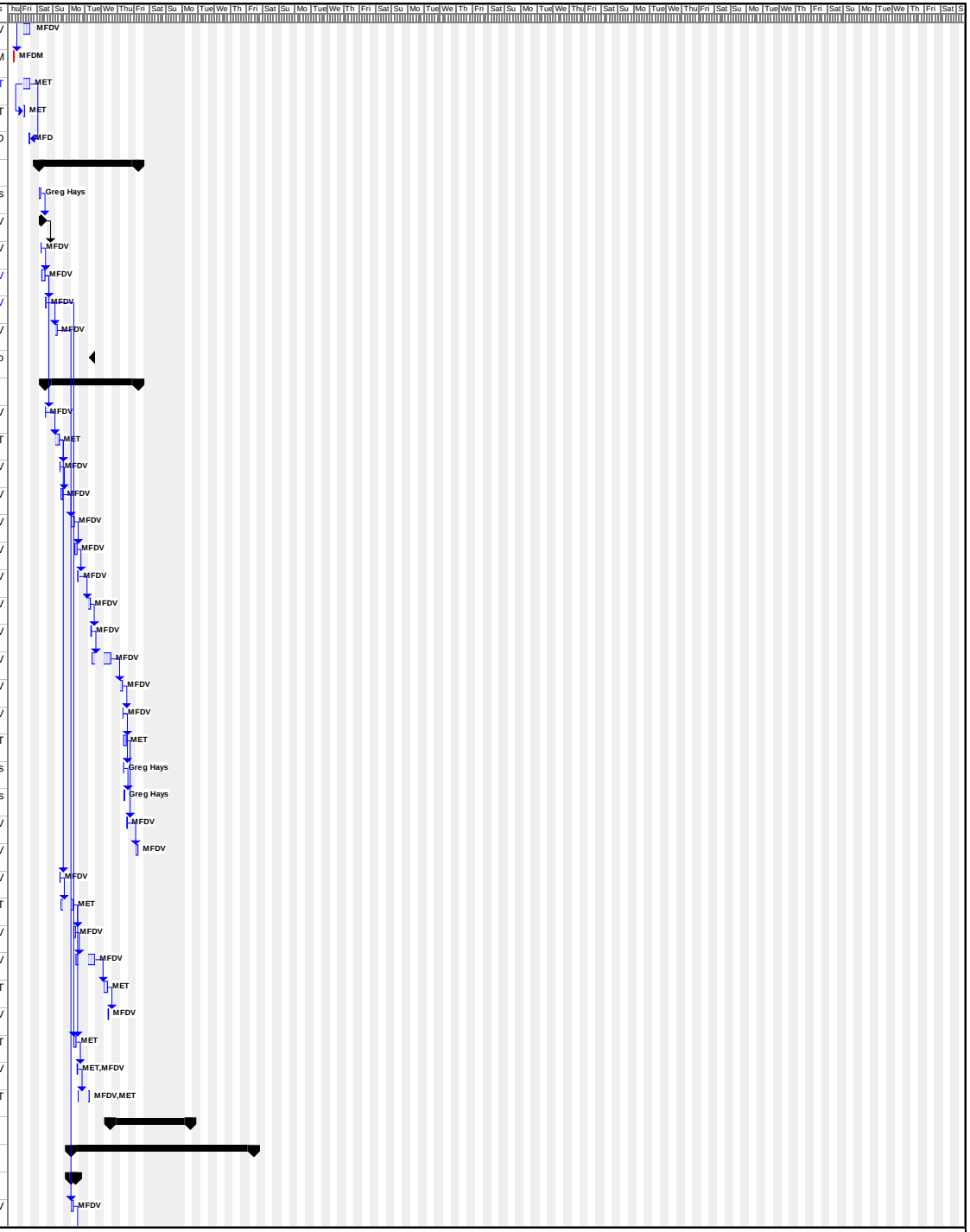
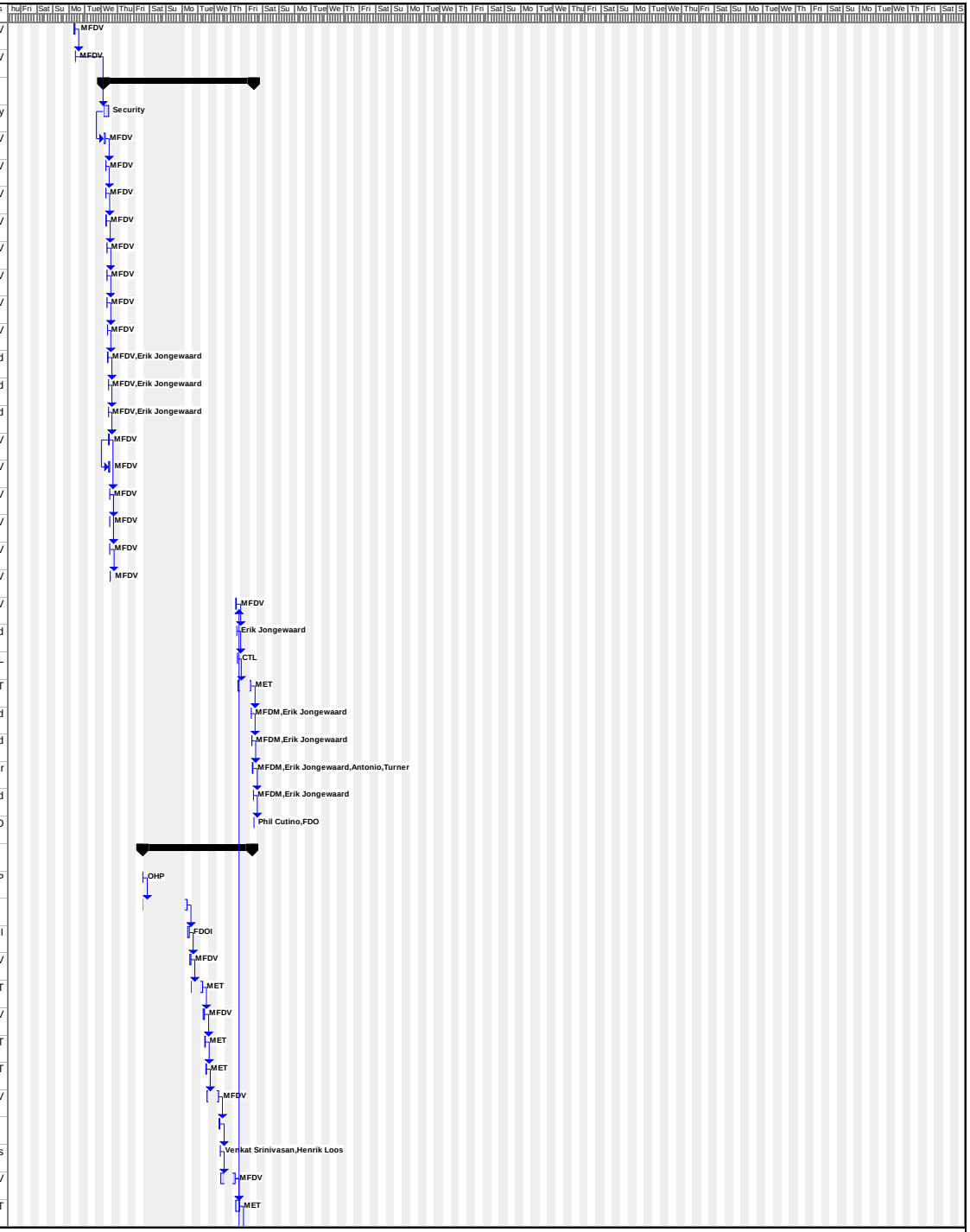
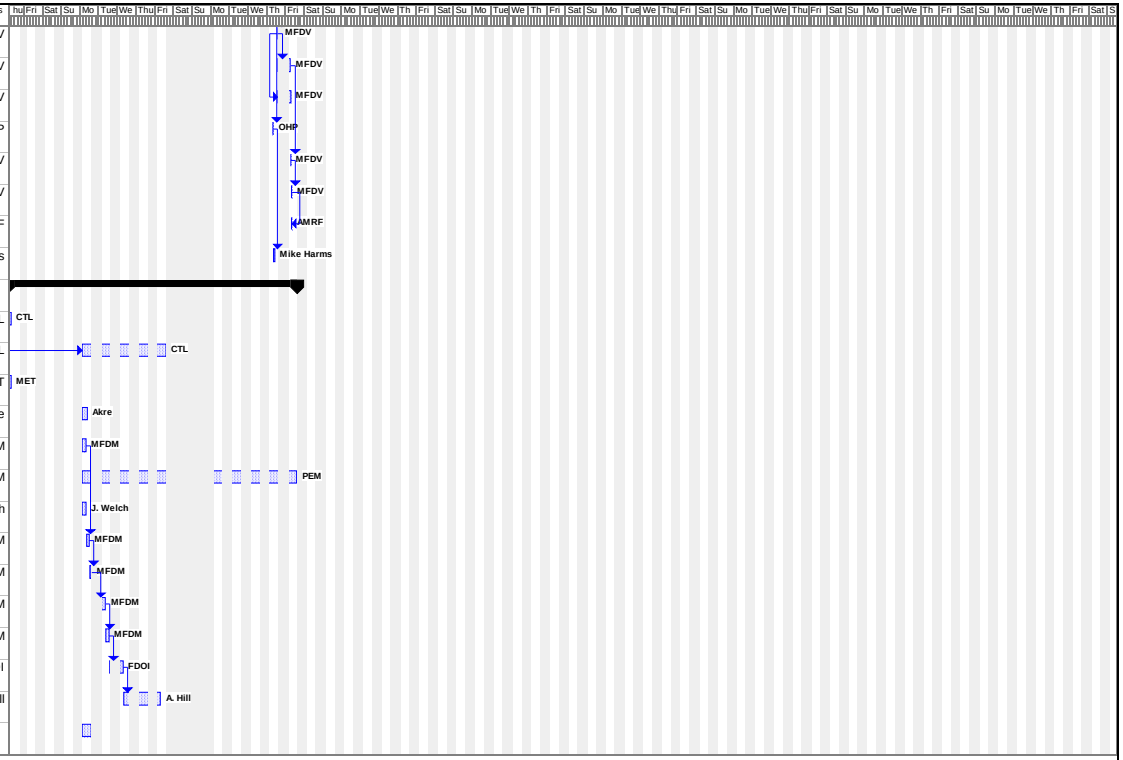
ID		Task Name	Duration	Start	Finish	Resource Names
1		**LCLS INJECTOR SHUT-DOWN**	**31.13 days?**	**Mon 3/24/08**	**Fri 4/25/08**	
2		**PRE-DOWN WORK**	**17 days**	**Mon 3/24/08**	**Thu 4/10/08**	
3		**CLEAN PARTS FOR GUN VENT**	**3 days**	**Sat 3/29/08**	**Mon 3/31/08**	
4		Clean tee & purge flange	24 hrs	Sat 3/29/08	Mon 3/31/08	MFDV
5	✓	**REPLACEMENT TOROID FOR IM01**	**3 days**	**Mon 3/24/08**	**Wed 3/26/08**	
9		**PRE-DOWN TASKS**	**14.5 days**	**Tue 3/25/08**	**Tue 4/8/08**	
10	✓	Prep cathode camera	8 hrs	Tue 3/25/08	Tue 3/25/08	Greg Hays
11	✓	Prep in-vacuum mirror	8 hrs	Wed 3/26/08	Wed 3/26/08	Greg Hays
12	✓	Laser Fiducial on VV01	4 hrs	Wed 4/2/08	Wed 4/2/08	Greg Hays
13	✓	Install air regulator at vault entrance (utility air use)	2 hrs	Wed 4/2/08	Wed 4/2/08	FDOI
14		Re-phase 21-1D	4 hrs	Tue 4/8/08	Tue 4/8/08	Akre
15		Install Damping on Square Strong Back for WS044 & 144	2 hrs	Tue 4/8/08	Tue 4/8/08	MFDM
16		Install Gear Reduction on WS02	1 hr	Tue 4/8/08	Tue 4/8/08	CTL
17		Install HEPA filter on outside air vent (inside vault)	2 hrs	Tue 4/8/08	Tue 4/8/08	HVAC
18		Label and Photograph RF & LCW commections	1 hr	Tue 4/8/08	Tue 4/8/08	Dave Dowell
19		**LCLS BEAM OFF - 7:00 AM**	0 hrs	Thu 4/10/08	Thu 4/10/08	
20		**GTL WORK**	**9.87 days**	**Thu 4/10/08**	**Mon 4/21/08**	
21		**Prep for Diagnostic Cross Removal**	**2.13 days**	**Thu 4/10/08**	**Fri 4/11/08**	
22		Turn filaments off for Sta 20-5, 6, 7 & 8	4 hrs	Thu 4/10/08	Thu 4/10/08	AMRF
23		Verify OTR foils and YAGS are retracted	0.5 hrs	Thu 4/10/08	Thu 4/10/08	Henrik Loos
24		Laser Alignment Verification, remove Cathode camera	2 hrs	Thu 4/10/08	Thu 4/10/08	Greg Hays
25		Disconnect air from GTL devices	1.5 hrs	Thu 4/10/08	Thu 4/10/08	FDOI
26		Remove YAG01 & YAGG1 Camera and Optics Box	1 hr	Thu 4/10/08	Thu 4/10/08	V. Brown
27		Secure Controls for AM01,YAG01 &YAGG1	0.25 hrs	Thu 4/10/08	Thu 4/10/08	CTL,V. Brown
28		Inspect & Tag Cabling for AM01,YAG01 &YAGG1	0.5 hrs	Thu 4/10/08	Thu 4/10/08	CTL,V. Brown
29		Disconnect & Dress Cabling for AM01,YAG01 &YAGG1	0.5 hrs	Thu 4/10/08	Thu 4/10/08	CTL,V. Brown
30		Secure Controls for FC01 & IM01	0.25 hrs	Thu 4/10/08	Thu 4/10/08	CTL,M Browne
31		Inspect & Tag Cabling for FC01 & IM01	0.5 hrs	Thu 4/10/08	Thu 4/10/08	CTL,M Browne
32		Disconnect & Dress Cabling for FC01 & IM01	0.5 hrs	Thu 4/10/08	Thu 4/10/08	CTL,M Browne
33		Lock&Tag PS for Bucking Coil, SOL1 & 2, all inj magnets	1 hr	Thu 4/10/08	Thu 4/10/08	Patrick Smith
34		Tag and label Bucking Coil power leads	0.2 hrs	Thu 4/10/08	Thu 4/10/08	MFDM
35		Remove power leads to Bucking Coil	0.2 hrs	Thu 4/10/08	Thu 4/10/08	MFDM
36		Tag and remove jumpers to RF pickups	0.5 hrs	Thu 4/10/08	Thu 4/10/08	k Jongewaard
37		Tag & Remove RF Pickup leads	0.5 hrs	Thu 4/10/08	Thu 4/10/08	KLY
38		Shut off LCW for Gun Cathode -LOTO	0.2 hrs	Thu 4/10/08	Thu 4/10/08	FDO
39		Drain LCW, blow lines w nitrogen or compressed air	1 hr	Thu 4/10/08	Thu 4/10/08	O,Phil Cutino
40		Loosen LCW fittings for Gun Cathode	0.2 hrs	Thu 4/10/08	Thu 4/10/08	MFDM
41		Remove LCW lines	0.2 hrs	Thu 4/10/08	Thu 4/10/08	MFDM
42		Cap Cathode LCW lines	0.2 hrs	Thu 4/10/08	Thu 4/10/08	MFDM
43		Remove Bucking Coil	1 hr	Thu 4/10/08	Thu 4/10/08	k Jongewaard
44		Close TCAV RF Valve on Injector Side	1 hr	Thu 4/10/08	Thu 4/10/08	MFDV
45		Lock VV01 valve controller to CLOSED mode	0.2 hrs	Thu 4/10/08	Thu 4/10/08	MFDV
46		Close VV04	0.2 hrs	Thu 4/10/08	Thu 4/10/08	MFDV
47		Verify VV02 and VV03 are Open	0.2 hrs	Thu 4/10/08	Thu 4/10/08	MFDV



ID	Task Name	Duration	Start	Finish	Resource Names
48	Stage Equipment and setup to vent from VV01 thru VV04	8 hrs	Fri 4/11/08	Fri 4/11/08	MFDV
49	Bring equipment downstairs (no acess to vault during crane	2 hrs	Thu 4/10/08	Thu 4/10/08	MFDM
50	Initial Pos.Survey GTL diagnostics, RF Gun and Table	8 hrs	Fri 4/11/08	Fri 4/11/08	MET
51	Install Tooling Balls on Gun Flange	0.5 hrs	Fri 4/11/08	Fri 4/11/08	MET
52	LOTO Vault magnets, Modulators, etc	2 hrs	Fri 4/11/08	Fri 4/11/08	MFD
53	**Diagnostics Cross Removal & Repairs**	**6.13 days**	**Sat 4/12/08**	**Fri 4/18/08**	
54	Laser Alignment Verification, remove Cathode camera	0.5 hrs	Sat 4/12/08	Sat 4/12/08	Greg Hays
55	Begin logging Gun Vacuum	0 hrs	Sat 4/12/08	Sat 4/12/08	MFDV
56	Vent VV01 to VV04	1 hr	Sat 4/12/08	Sat 4/12/08	MFDV
57	Remove Diagnostics Cross and take to Vacuum lab	4.5 hrs	Sat 4/12/08	Sat 4/12/08	MFDV
58	Remove YAGG1 and take to Vacuum Lab	2 hrs	Sat 4/12/08	Sat 4/12/08	MFDV
59	Install window in place of IM01	0.5 hrs	Sun 4/13/08	Sun 4/13/08	MFDV
60	Make Call for Friday GTL Install	0 days	Tue 4/15/08	Tue 4/15/08	Phil Cutino
61	**Vacuum Lab Repair of Diagnostics Cross**	**5.38 days**	**Sat 4/12/08**	**Fri 4/18/08**	
62	Setup Diagnostic Cross for Initial Survey	1 hr	Sat 4/12/08	Sat 4/12/08	MFDV
63	Survery Diagnostic Cross	4 hrs	Sun 4/13/08	Sun 4/13/08	MET
64	Remove YAG01/FC01 Screen Assembly	1 hr	Sun 4/13/08	Sun 4/13/08	MFDV
65	Dissassemble YAG01/FC01 Screen Assembly	3 hrs	Sun 4/13/08	Sun 4/13/08	MFDV
66	Repair FC01 Wiring	2 hrs	Mon 4/14/08	Mon 4/14/08	MFDV
67	Reassemble YAG01/FC01 Screen Assembly	4 hrs	Mon 4/14/08	Mon 4/14/08	MFDV
68	Turn AM01 Mirror around	2 hrs	Mon 4/14/08	Mon 4/14/08	MFDV
69	Adjust YAG01 Actuator	2 hrs	Tue 4/15/08	Tue 4/15/08	MFDV
70	Adjust AM01 Actuator	2 hrs	Tue 4/15/08	Tue 4/15/08	MFDV
71	Replace Struts for YAG01/FC01/AM01	12 hrs	Tue 4/15/08	Wed 4/16/08	MFDV
72	Replace IM01	2 hrs	Thu 4/17/08	Thu 4/17/08	MFDV
73	Setup Diagnostic Cross for Final Bench Alignment	1 hr	Thu 4/17/08	Thu 4/17/08	MFDV
74	Align YAG01/FC01/AM01	4 hrs	Thu 4/17/08	Thu 4/17/08	MET
75	Replace outcoupling In-Vacuum Mirror	1 hr	Thu 4/17/08	Thu 4/17/08	Greg Hays
76	Inspect in-coupling In-vacuum mirror, and replace if nece	1 hr	Thu 4/17/08	Thu 4/17/08	Greg Hays
77	Pump Down & Leak Check Diagnostics Cross	1 hr	Thu 4/17/08	Thu 4/17/08	MFDV
78	Return Diagnostics Cross to Sector 20	1 hr	Fri 4/18/08	Fri 4/18/08	MFDV
79	SetupYAGG1 for Initial Survey	1 hr	Sun 4/13/08	Sun 4/13/08	MFDV
80	Survey YAGG1	4 hrs	Sun 4/13/08	Mon 4/14/08	MET
81	Set hard stops for YAGG1 actuator	3 hrs	Mon 4/14/08	Mon 4/14/08	MFDV
82	Replace Struts for YAGG1	12 hrs	Mon 4/14/08	Tue 4/15/08	MFDV
83	Align YAGG1	4 hrs	Wed 4/16/08	Wed 4/16/08	MET
84	Return YAGG1 to Sector 20	1 hr	Wed 4/16/08	Wed 4/16/08	MFDV
85	Setup Mirror and Camera to Site Downbeam to YAG02	4 hrs	Mon 4/14/08	Mon 4/14/08	MET
86	Check alignment and wakefield plugs of YAG02 & CR01	2 hrs	Mon 4/14/08	Mon 4/14/08	MET,MFDV
87	Check alignment of BPM3 & YAG02	2 hrs	Mon 4/14/08	Tue 4/15/08	MFDV,MET
88	**GTL Reinstall**	**2.94 days**	**Wed 4/16/08**	**Mon 4/21/08**	
104	**Gun Work**	**9.59 days**	**Mon 4/14/08**	**Fri 4/25/08**	
105	**PREP WORK - REPLACE RF PICKUPS**	**0.5 days**	**Mon 4/14/08**	**Mon 4/14/08**	
106	Prep Nitrogen purge to gun down stairs	1 hr	Mon 4/14/08	Mon 4/14/08	MFDV



ID	Task Name	Duration	Start	Finish	Resource Names
107	Install Air Shower - (no other work in area - overhead work)	2 hrs	Mon 4/14/08	Mon 4/14/08	MFDV
108	Wipe all Surfaces Near Gun Down	1 hr	Mon 4/14/08	Mon 4/14/08	MFDV
109	**REMOVE AND REPLACE RF PROBES**	**7.59 days**	**Wed 4/16/08**	**Fri 4/25/08**	
110	Secure area outside near air intake	5 hrs	Wed 4/16/08	Wed 4/16/08	Security
111	Close bakeable valve to RGA	0.2 hrs	Wed 4/16/08	Wed 4/16/08	MFDV
112	Turn off Gun vacuum gauges	0.2 hrs	Wed 4/16/08	Wed 4/16/08	MFDV
113	Install Venting Pumpout cross and leak detector on Gun	0.5 hrs	Wed 4/16/08	Wed 4/16/08	MFDV
114	Pump & Backfill Manifold	1 hr	Wed 4/16/08	Wed 4/16/08	MFDV
115	Turn off Gun ion pumps	0.2 hrs	Wed 4/16/08	Wed 4/16/08	MFDV
116	Start purge (PRV upstairs)	0.2 hrs	Wed 4/16/08	Wed 4/16/08	MFDV
117	Open Gun pump-out valve	0.2 hrs	Wed 4/16/08	Wed 4/16/08	MFDV
118	Vent Gun	0.25 hrs	Wed 4/16/08	Wed 4/16/08	MFDV
119	Remove and replace one RF pickup at the time (Mini CF + n	1.5 hrs	Wed 4/16/08	Wed 4/16/08	k Jongewaard
120	Electrical check of RF pickups	0.13 hrs	Wed 4/16/08	Wed 4/16/08	k Jongewaard
121	Stop purge after 4th RF pickup is installed	0.1 hrs	Wed 4/16/08	Wed 4/16/08	k Jongewaard
122	Pump-down Gun	1 hr	Wed 4/16/08	Wed 4/16/08	MFDV
123	Replace VP640	2 hrs	Wed 4/16/08	Wed 4/16/08	MFDV
124	Leak check Gun	0.5 hrs	Wed 4/16/08	Wed 4/16/08	MFDV
125	Start ion pumps if N.I.L (If not N.I.L, fix leak)	0.5 hrs	Wed 4/16/08	Wed 4/16/08	MFDV
126	Start vacuum gauges	0.5 hrs	Wed 4/16/08	Wed 4/16/08	MFDV
127	Valve off/remove pump cart/leak detector	1 hr	Wed 4/16/08	Wed 4/16/08	MFDV
128	Remove plastic curtain/portable clean room	2 hrs	Thu 4/24/08	Thu 4/24/08	MFDV
129	Install RF pickup jumper leads	0.5 hrs	Thu 4/24/08	Thu 4/24/08	k Jongewaard
130	Install RF pickup leads	1 hr	Thu 4/24/08	Thu 4/24/08	CTL
131	Re-survey gun and laser table location using cathode flange	4 hrs	Thu 4/24/08	Fri 4/25/08	MET
132	Install Bucking Coil (after final alignment)	0.5 hrs	Fri 4/25/08	Fri 4/25/08	k Jongewaard
133	Install power leads to Bucking Coil	0.5 hrs	Fri 4/25/08	Fri 4/25/08	k Jongewaard
134	Check Bucking Coil for shorts to ground, inspect polarity, etc	2 hrs	Fri 4/25/08	Fri 4/25/08	ntonio,Turner
135	Install Gun Cathode LCW lines	0.5 hrs	Fri 4/25/08	Fri 4/25/08	k Jongewaard
136	Turn Gun Cathode LCW back on, check for LCW leaks	0.25 hrs	Fri 4/25/08	Fri 4/25/08	ill Cutino,FDO
137	**Replace VV03 and Realign TCAV**	**4.44 days**	**Fri 4/18/08**	**Fri 4/25/08**	
138	Remove BSOIC near shielding wall	1 hr	Fri 4/18/08	Fri 4/18/08	OHP
139	Survey TCAV for Present Position	2 hrs	Fri 4/18/08	Mon 4/21/08	
140	Run Air Line for VV03	3 hrs	Mon 4/21/08	Mon 4/21/08	FDOI
141	Disconnect TCAV from Beamline and waveguide to prep for alig	2 hrs	Mon 4/21/08	Mon 4/21/08	MFDV
142	Realign TCAV Requires Realignment counterclockwise 2.5 deg	2 hrs	Mon 4/21/08	Tue 4/22/08	MET
143	Re-connect up- and down-beam TCAV CF & WG connections	3 hrs	Tue 4/22/08	Tue 4/22/08	MFDV
144	Realign TCAV Steering Coil	1 hr	Tue 4/22/08	Tue 4/22/08	MET
145	Check alignment of TCAV	1 hr	Tue 4/22/08	Tue 4/22/08	MET
146	Replace VV03	3 hrs	Tue 4/22/08	Wed 4/23/08	MFDV
147	Connect Controls for VV03	2 hrs	Wed 4/23/08	Wed 4/23/08	
148	Verify OTR foils and YAGS are retracted	0.5 hrs	Wed 4/23/08	Wed 4/23/08	n,Henrik Loos
149	Pump Down and Leak Check VV01 to VV04	6 hrs	Wed 4/23/08	Thu 4/24/08	MFDV
150	Final Survey table, GTL & gun	6 hrs	Thu 4/24/08	Thu 4/24/08	MET



ID		Task Name	Duration	Start	Finish	Resource Names
151		Valve off leak detector/pump cart	0.5 hrs	Thu 4/24/08	Thu 4/24/08	MFDV
152		Start ion pumps/vacuum gauges	1 hr	Thu 4/24/08	Fri 4/25/08	MFDV
153		Remove Equipment	2 hrs	Thu 4/24/08	Fri 4/25/08	MFDV
154		Replace BSOIC	1 hr	Thu 4/24/08	Thu 4/24/08	OHP
155		Open TCAV RF valve in Injector side	0.5 hrs	Fri 4/25/08	Fri 4/25/08	MFDV
156		Disconnect nitrogen purge upstairs	1 hr	Fri 4/25/08	Fri 4/25/08	MFDV
157		Turn on Filaments for 20-5, 6, 7 & 8	1 hr	Fri 4/25/08	Fri 4/25/08	AMRF
158		Install UPS in Injector Vault	2 hrs	Thu 4/24/08	Thu 4/24/08	Mike Harms
159		**LINAC HOUSING WORK**	**14.13 days?**	**Thu 4/10/08**	**Fri 4/25/08**	
160		Change cables on BPM LI29 401	2 hrs	Thu 4/10/08	Thu 4/10/08	CTL
161		Repair Rad damaged cabling for LI30 Collimators	40 hrs	Mon 4/14/08	Fri 4/18/08	CTL
162		Align XCOR7 & YCOR7	2 hrs	Thu 4/10/08	Thu 4/10/08	MET
163		Adjust Phasing for PH03	4 hrs	Mon 4/14/08	Mon 4/14/08	Akre
164		Install bumpers on BC2	2 hrs	Mon 4/14/08	Mon 4/14/08	MFDM
165		Inspect Corrector Magnets in LI20 thru LI30	10 days	Mon 4/14/08	Fri 4/25/08	PEM
166		Check Remnant Fields on BC1 Dipoles	2 hrs	Mon 4/14/08	Mon 4/14/08	J. Welch
167		Dress Water Hoses Around BC2	4 hrs	Mon 4/14/08	Mon 4/14/08	MFDM
168		Install Modified Covers for CE21	2 hrs	Mon 4/14/08	Mon 4/14/08	MFDM
169		Replace OTR21 Actuator Cylinder	3 hrs	Tue 4/15/08	Tue 4/15/08	MFDM
170		Dress Water Hoses Around BC1	4 hrs	Tue 4/15/08	Tue 4/15/08	MFDM
171		Clean up Bias Air Installation for OTR21	3 hrs	Tue 4/15/08	Wed 4/16/08	FDOI
172		Install Heliax in LI21 thru LI24	2 days	Wed 4/16/08	Fri 4/18/08	A. Hill
173		Checkout Bld 5 Networking	1 day?	Mon 4/14/08	Mon 4/14/08