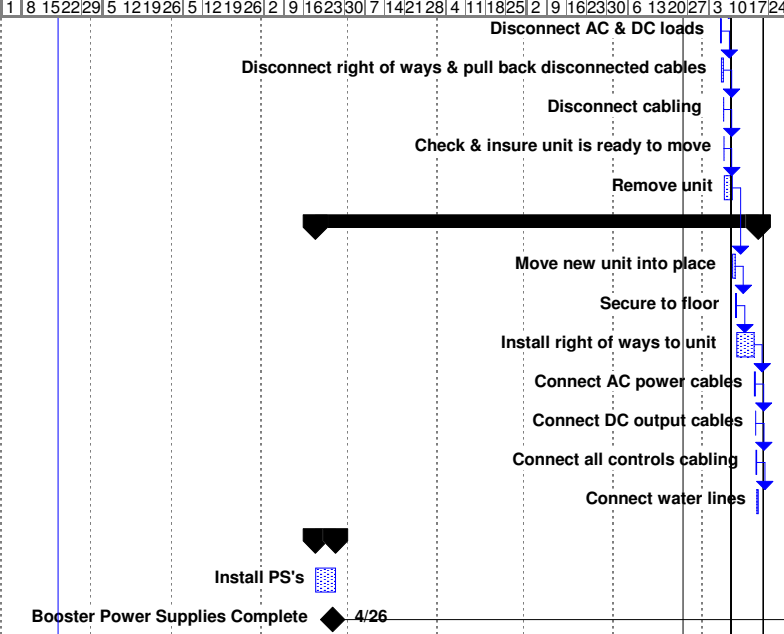


ID	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Mar '05	Apr '05	May '05	Jun '05	Jul '05	Aug '05	Sep '05	Oct '05	Nov '05	Dec '05	Jan '06	Feb '06	Mar '06	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06
1	Top Off Project	666 days?	Mon 10/4/04	Mon 4/23/07																						
2																										
3	Project Management	86 wks	Mon 10/4/04	Fri 5/26/06																						
4	✓ Receive Additional FY05 Funding	0 days	Tue 3/1/05	Tue 3/1/05																						
5	Receive FY06 Funding	0 days	Mon 10/3/05	Mon 10/3/05																						
6	Installation Shutdown	0 days	Mon 9/4/06	Mon 9/4/06																						
7	Approval of Delayed Scope	0 days	Mon 10/2/06	Mon 10/2/06																						
8																										
9	✓ Top Off Documentation	80 days	Mon 10/4/04	Fri 1/21/05																						
14																										
15	Linac (Unapproved Scope)	100 days	Mon 10/2/06	Fri 2/16/07																						
26																										
27	Booster	611 days	Mon 11/22/04	Mon 3/26/07																						
28	Power Supplies	368.25 days	Fri 4/22/05	Thu 9/21/06																						
29	✓ Write Specifications for Bend & Quads	70 edays	Fri 4/22/05	Fri 7/1/05		Fahmie,																				
30	✓ Design Review/ReWrites if Needed	5 days	Wed 7/6/05	Tue 7/12/05																						
31	Procurement Process/Order Bend & Quads	6 wks	Mon 12/12/05	Fri 1/20/06		30,373																				
32	Bend & Quad PS Commercial Fab	7 mons	Thu 9/1/05	Wed 3/15/06																						
33	Write Specifications for B1-B4 PS's	2 wks	Mon 12/12/05	Fri 12/23/05		29,373																				
34	Review of Specifications B1-B4	2 days	Mon 12/26/05	Tue 12/27/05		33																				
35	Procurement Process/Order B1-B4 PS's	3 wks	Wed 12/28/05	Tue 1/17/06		373,34																				
36	B1-B4 Power Supply Commercial Fab	6 mons	Mon 10/10/05	Fri 3/24/06																						
37	Receive Spare Control Unit for Programming	0 days	Mon 10/10/05	Mon 10/10/05																						
38	Specify Requirements for Sextupole PS's	1 wk	Tue 11/1/05	Mon 11/7/05		Fahmie																				
39	Procurement Process Sextupole PS's	1 wk	Mon 11/14/05	Fri 11/18/05																						
40	Sextupole Power Supplies Commercial Fab	2 mons	Mon 11/21/05	Fri 1/13/06																						
41	Quadrupole PS Installation	13.25 days	Mon 9/4/06	Thu 9/21/06		6,40																				
42	Remove Old PS	4.25 days	Mon 9/4/06	Fri 9/8/06																						
43	LOTO	2 hrs	Mon 9/4/06	Mon 9/4/06																						
44	Disconnect AC & DC loads	8 hrs	Mon 9/4/06	Tue 9/5/06		43																				
45	Disconnect right of ways & pull back disconnected ca	8 hrs	Tue 9/5/06	Wed 9/6/06		44																				
46	Disconnect cabling	2 hrs	Wed 9/6/06	Wed 9/6/06		45																				
47	Check & insure unit is ready to move	2 hrs	Wed 9/6/06	Wed 9/6/06		46																				
48	Remove unit	12 hrs	Wed 9/6/06	Fri 9/8/06		47																				
49	Install New PS	13.25 days	Mon 9/4/06	Thu 9/21/06																						
50	Move new unit into place	12 hrs	Mon 9/4/06	Tue 9/5/06																						
51	Secure to floor	8 hrs	Tue 9/5/06	Wed 9/6/06		50																				
52	Install right of ways to unit	64 hrs	Wed 9/6/06	Mon 9/18/06		51																				
53	Connect AC power cables	8 hrs	Mon 9/18/06	Tue 9/19/06		52																				
54	Connect DC output cables	4 hrs	Tue 9/19/06	Tue 9/19/06		53																				
55	Connect all controls cabling	4 hrs	Wed 9/20/06	Wed 9/20/06		54																				
56	Connect water lines	6 hrs	Wed 9/20/06	Thu 9/21/06		55																				
57	Bend PS Installation	109.5 days	Thu 4/20/06	Wed 9/20/06		36																				
58	Remove Old PS	2.5 days	Thu 9/7/06	Mon 9/11/06																						
59	LOTO	2 hrs	Thu 9/7/06	Thu 9/7/06		6FS+3 days																				

ID	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Mar '05	Apr '05	May '05	Jun '05	Jul '05	Aug '05	Sep '05	Oct '05	Nov '05	Dec '05	Jan '06	Feb '06	Mar '06	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06
60	Disconnect AC & DC loads	4 hrs	Thu 9/7/06	Thu 9/7/06	59																					
61	Disconnect right of ways & pull back disconnected ca	4 hrs	Thu 9/7/06	Fri 9/8/06	60																					
62	Disconnect cabling	1 hr	Fri 9/8/06	Fri 9/8/06	61																					
63	Check & insure unit is ready to move	1 hr	Fri 9/8/06	Fri 9/8/06	62																					
64	Remove unit	8 hrs	Fri 9/8/06	Mon 9/11/06	63																					
65	Install New PS	109.5 days	Thu 4/20/06	Wed 9/20/06																						
66	Move new unit into place	8 hrs	Mon 9/11/06	Tue 9/12/06	64																					
67	Secure to floor	4 hrs	Tue 9/12/06	Tue 9/12/06	66																					
68	Install right of ways to unit	32 hrs	Wed 9/13/06	Mon 9/18/06	67																					
69	Connect AC power cables	4 hrs	Tue 9/19/06	Tue 9/19/06	68																					
70	Connect DC output cables	2 hrs	Tue 9/19/06	Tue 9/19/06	69																					
71	Connect all controls cabling	2 hrs	Tue 9/19/06	Tue 9/19/06	70																					
72	Connect water lines	4 hrs	Wed 9/20/06	Wed 9/20/06	71																					
73	Install New Sextupole PS's	5 days	Thu 4/20/06	Wed 4/26/06																						
74	Install PS's	1 wk	Thu 4/20/06	Wed 4/26/06																						
75	Booster Power Supplies Complete	0 days	Wed 4/26/06	Wed 4/26/06																						
76																										
77	Thin Septum Magnet	280 days	Mon 11/22/04	Fri 12/16/05																						
78	EDI	45 ewks	Mon 11/22/04	Mon 10/3/05		Shuman																				
79	Magnet - swap out procedure	45 days	Mon 5/2/05	Fri 7/1/05		Stover,S																				
80	Magnetic/mechanic measurements at higher fields on spare	30 days	Wed 3/16/05	Tue 4/26/05	88FS+5 days	spare																				
81	Short lifetime testing at higher field	8 wks	Mon 6/27/05	Fri 8/19/05																						
82	Order Supply	0 days	Mon 10/3/05	Mon 10/3/05																						
83	Receive Supply	0 days	Fri 12/2/05	Fri 12/2/05	82FS+45 day																					
84	Power Supplies- KSI upgrade	10 days	Mon 12/5/05	Fri 12/16/05	83																					
85																										
86	Thick Septum Magnet	295 days	Mon 11/22/04	Fri 1/6/06																						
87	EDI	100 edays	Mon 11/22/04	Wed 3/2/05																						
88	Magnetic/Mechanic Measurements at Higher Fields on Spare	30 edays	Mon 2/7/05	Wed 3/9/05																						
89	Short lifetime testing at higher field	60 edays	Fri 8/19/05	Tue 10/18/05	80,81																					
90	Review Specs and potential manufactureres	0 days	Mon 9/12/05	Mon 9/12/05																						
91	Order Supply	0 days	Mon 10/3/05	Mon 10/3/05	5,90																					
92	Receive Supply	0 days	Fri 12/2/05	Fri 12/2/05	91FS+45 day																					
93	Power Supplies - KSI replacement	10 days	Mon 12/19/05	Fri 12/30/05	84,92																					
94	Order Caps	0 days	Mon 10/3/05	Mon 10/3/05																						
95	Receive Caps	0 days	Fri 12/23/05	Fri 12/23/05	94FS+60 day																					
96	Power Supplies - replace capacitors	10 days	Mon 12/26/05	Fri 1/6/06	95																					
97																										
98	Kicker Magnet	40 days	Mon 8/1/05	Fri 9/23/05																						
99	EDI	15 days	Mon 8/1/05	Fri 8/19/05	4	Ottens																				
100	Power Supplies - one new interface	5 days	Mon 8/22/05	Fri 8/26/05	99	Ottens																				
101	Power Supplies - HV diode stack	5 days	Mon 8/29/05	Fri 9/2/05	100	Ottens																				
102	Power Supplies - Kicker structure upgades	5 days	Mon 9/5/05	Fri 9/9/05	101	Ottens																				
103	Power Supplies - charge-line upgrades	10 days	Mon 9/12/05	Fri 9/23/05	102	Ottens																				
104																										



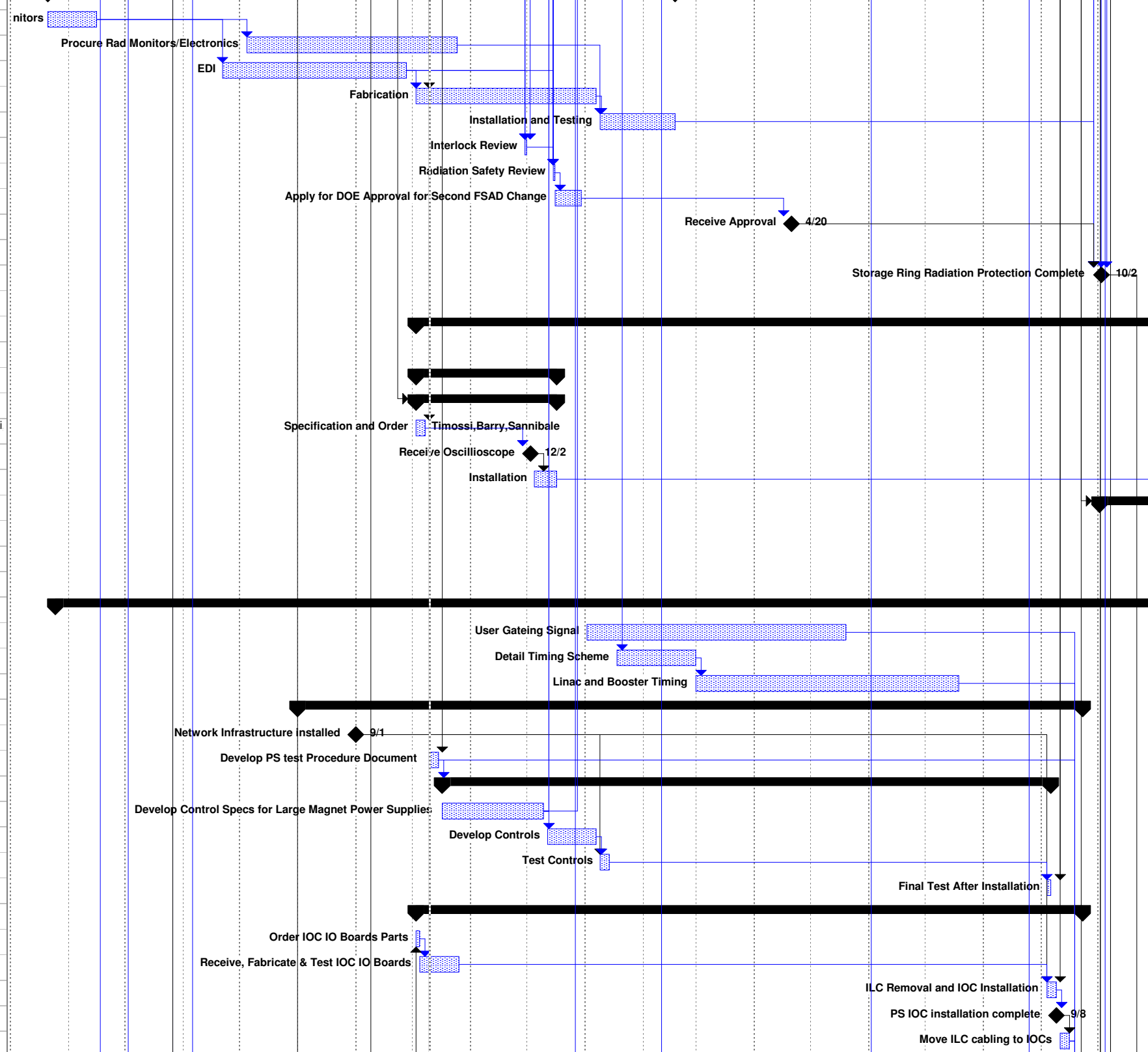
ID	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Mar '05	Apr '05	May '05	Jun '05	Jul '05	Aug '05	Sep '05	Oct '05	Nov '05	Dec '05	Jan '06	Feb '06	Mar '06	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06
105	Booster Pulsed Magnets Complete	0 days	Fri 1/6/06	Fri 1/6/06	103,96,87,89																					
106																										
107	RF	422 days	Tue 3/1/05	Wed 10/11/06																						
108	Money Available for Procurement	0 days	Tue 3/1/05	Tue 3/1/05	4																					
109	EDI Overall System	394 days	Tue 3/1/05	Mon 9/4/06																						
110	EDI/Specs for Procurements	92 days	Tue 3/1/05	Wed 7/6/05																						
111	Design Review for HVPS and Tranmitter	20 days	Wed 6/1/05	Tue 6/28/05	413FS-3 wks																					
112	Procurement Decision for Ceramics	0 days	Mon 3/14/05	Mon 3/14/05																						
113	Design review for RF Window	0 days	Thu 5/12/05	Thu 5/12/05																						
114	EDI Overall System	160 days	Tue 3/1/05	Mon 10/10/05	108																					
115	Begin Installation Shutdown	0 days	Mon 9/4/06	Mon 9/4/06	6																					
116	High Voltage Power Supply	303 days	Thu 7/7/05	Tue 9/5/06																						
117	Procurement Process	9.14 ewks	Thu 7/7/05	Fri 9/9/05	111FS+7 day																					
118	Purchase HVPS	186 edays	Fri 9/9/05	Tue 3/14/06	108,110,111,																					
119	Removal of existing HVPS	2 days	Mon 9/4/06	Tue 9/5/06	115																					
120	Installation of new HVPS	30 days	Tue 3/28/06	Tue 5/9/06																						
121	Installation of HVPS	6 wks	Tue 3/28/06	Tue 5/9/06	118FS+2 ewk																					
122	Installation of HVPS complete	0 days	Tue 5/9/06	Tue 5/9/06	121																					
123	Final Amplifier/Transmitter	320 days	Thu 7/7/05	Wed 9/27/06																						
124	Procurement Process	9.14 ewks	Thu 7/7/05	Fri 9/9/05	111																					
125	Purchase Transmitter System	186 edays	Fri 9/9/05	Tue 3/14/06	108,412,111,																					
126	IOT Procurement Process	9.14 ewks	Thu 7/7/05	Fri 9/9/05	111FS+7 day																					
127	IOT Tube purchase	12 ewks	Fri 9/9/05	Fri 12/2/05	108,110,126,																					
128	Removal of existing xmtr	3 days	Wed 9/6/06	Fri 9/8/06	119																					
129	Temp Install xmtr for testing	84.94 days	Tue 3/28/06	Tue 7/25/06																						
130	Temp Install Xmtr	3 ewks	Tue 3/28/06	Tue 4/18/06	125FS+2 ewk																					
131	Acceptance Test Xmtr	15 days	Tue 5/9/06	Tue 5/30/06	130,122																					
132	Control System Programming	40 days	Tue 5/30/06	Tue 7/25/06	131																					
133	Xmtr tested & Controls Programmed	0 days	Tue 7/25/06	Tue 7/25/06	132																					
134	Reinstall xmtr in final location, test	13 days	Mon 9/11/06	Wed 9/27/06	128																					
135	RF Cavity Window	235 days	Mon 4/4/05	Fri 2/24/06																						
136	Procurement process (ceramics)	1 ewk	Mon 4/4/05	Mon 4/11/05	112FS+3 ewk																					
137	Purchase Ceramics	109 edays	Mon 4/11/05	Fri 7/29/05	108FS+4 wks																					
138	Procurement process (manufacture)	1 ewk	Mon 7/4/05	Mon 7/11/05	113																					
139	Ceramics acceptance measurements	6 wks	Fri 7/29/05	Thu 9/8/05	137																					
140	Purchase RF Window Assemblies (manufacture)	12.7 ewks	Thu 9/15/05	Tue 12/13/05	137FS+7 wks																					
141	Window's shipping and customs	3 wks	Tue 12/13/05	Tue 1/3/06	140																					
142	Titanium Nitride Coat	25 days	Mon 1/9/06	Fri 2/10/06	141																					
143	Titanium Nitride Coating	20 days	Mon 1/9/06	Fri 2/3/06																						
144	RBS Measurements	5 days	Mon 2/6/06	Fri 2/10/06	143																					
145	Power Test Windows	2 wks	Mon 2/13/06	Fri 2/24/06	144																					
146	Windows Ready for Installation	0 days	Fri 2/24/06	Fri 2/24/06	145																					
147	RF Transmission Line	263 days	Mon 10/3/05	Wed 10/4/06																						
148	Purchase Components	12 wks	Mon 10/3/05	Fri 12/23/05	108																					
149	Remove Old/Install New Line	5 days	Thu 9/28/06	Wed 10/4/06	134,146,148,																					

ID	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Mar '05	Apr '05	May '05	Jun '05	Jul '05	Aug '05	Sep '05	Oct '05	Nov '05	Dec '05	Jan '06	Feb '06	Mar '06	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06
150	Controls and Interlocks	268 days	Mon 10/3/05	Wed 10/11/06																						
151	Purchase PLC	8 wks	Mon 10/3/05	Fri 11/25/05	108,5																					
152	Program PLC	4 wks	Tue 7/25/06	Tue 8/22/06	133,151																					
153	Testing	1 wk	Thu 10/5/06	Wed 10/11/06	149,152,415																					
154	RF System Ready for Beam	0 days	Wed 10/11/06	Wed 10/11/06	153																					
155	Utilities	35 days	Mon 10/31/05	Fri 12/16/05																						
156	Coordination	25 days	Mon 10/31/05	Fri 12/2/05																						
157	480 VAC	20 days	Mon 11/21/05	Fri 12/16/05	156FS-2 ewk																					
158	LCW	7 days	Mon 11/21/05	Tue 11/29/05	156FS-2 ewk																					
159	Structure Core Drilling	1 day	Mon 9/11/06	Mon 9/11/06	128																					
160	Spares	140 days	Mon 10/3/05	Fri 4/14/06																						
161	RSS Installation	353 days	Mon 5/2/05	Wed 9/6/06																						
162	EDI	2 wks	Mon 5/2/05	Fri 5/13/05																						
163	Installation	2 days	Mon 9/4/06	Tue 9/5/06	162,6																					
164	Testing	1 day	Wed 9/6/06	Wed 9/6/06	163																					
165																										
166	Booster RF Complete	0 days	Wed 10/11/06	Wed 10/11/06	164,154,114																					
167																										
168	Diagnostics	386 days	Mon 10/3/05	Mon 3/26/07																						
169	Bunch Cleaning (Unapproved Scope)	126 days	Mon 10/2/06	Mon 3/26/07	7																					
197	Tune Measurement System	352 days	Mon 10/3/05	Tue 2/6/07																						
198	Horizontal Kicker (Unapproved Scope)	92 days	Mon 10/2/06	Tue 2/6/07	7																					
204	Oscilloscope	60 days	Mon 10/3/05	Fri 12/23/05																						
205	Specification and Order	2 wks	Mon 10/3/05	Fri 10/14/05	4,5																					
206	Receive Oscilloscope	0 days	Fri 12/9/05	Fri 12/9/05	205FS+8 wks																					
207	Installation	2 wks	Mon 12/12/05	Fri 12/23/05	206																					
208	BPMs (Unapproved Scope)	56 days	Mon 10/2/06	Mon 12/18/06	7																					
213																										
214	Booster Diagnostics Complete	0 days	Mon 3/26/07	Mon 3/26/07	212,207,203,																					
215																										
216	BTS	456 days	Tue 7/5/05	Tue 4/3/07																						
217	Diagnostics	456 days	Tue 7/5/05	Tue 4/3/07																						
218	Tune Up Dump	92 days	Mon 10/3/05	Tue 2/7/06	5																					
219	EDI	6 wks	Mon 10/3/05	Fri 11/11/05		Mechan																				
220	Fabrication	12 wks	Mon 11/14/05	Fri 2/3/06	219																					
221	Installation	2 days	Mon 2/6/06	Tue 2/7/06	220																					
222	Synchrotron Radiation Monitors	456 days	Tue 7/5/05	Tue 4/3/07																						
223	Monitor on B1 Bend	52 days	Tue 7/5/05	Wed 9/14/05																						
224	EDI	2 wks	Tue 7/5/05	Mon 7/18/05	4	Scarvie,																				
225	Component Procurement	4 wks	Tue 7/19/05	Mon 8/15/05	224																					
226	Fabrication	3 wks	Tue 7/19/05	Mon 8/8/05	224																					
227	Mechanical Installation	2 days	Tue 8/16/05	Wed 8/17/05	226,225																					
228	Test and Evaluate	4 wks	Thu 8/18/05	Wed 9/14/05	227																					
229	Determine Value of B3 Monitor	0 days	Wed 9/14/05	Wed 9/14/05	228																					
230	Monitor on B3 Bend (Unapproved Scope)	132 days	Mon 10/2/06	Tue 4/3/07	7																					

ID	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Mar '05	Apr '05	May '05	Jun '05	Jul '05	Aug '05	Sep '05	Oct '05	Nov '05	Dec '05	Jan '06	Feb '06	Mar '06	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06
235	BIM 2 (Unapproved Scope)	60 days	Mon 11/27/06	Fri 2/16/07	7																					
239																										
240	BTS Diagnostics Complete	0 days	Fri 2/16/07	Fri 2/16/07	221,238																					
241																										
242	B1-B4 Bend Power Supplies	325.75 days	Wed 7/13/05	Wed 10/11/06																						
243	Procurement Process/Order	6 wks	Wed 7/13/05	Tue 8/23/05	30																					
244	B1-B4 Bend Power Supplies Commerical Fab	7 mons	Mon 12/12/05	Fri 6/23/06	373,243																					
245	Installation	22.75 days	Mon 9/11/06	Wed 10/11/06	6FS+5 days,																					
246	Remove Old PS	7.25 days	Mon 9/11/06	Wed 9/20/06																						
247	LOTO	2 hrs	Mon 9/11/06	Mon 9/11/06																						
248	Disconnect AC & DC loads	16 hrs	Mon 9/11/06	Wed 9/13/06	247																					
249	Disconnect right of ways & pull back disconnected ca	16 hrs	Wed 9/13/06	Fri 9/15/06	248																					
250	Disconnect cabling	4 hrs	Fri 9/15/06	Fri 9/15/06	249																					
251	Check & insure unit is ready to move	4 hrs	Fri 9/15/06	Mon 9/18/06	250																					
252	Remove unit	16 hrs	Mon 9/18/06	Wed 9/20/06	251																					
253	Install New PS	15.5 days	Wed 9/20/06	Wed 10/11/06																						
254	Move new unit into place	16 hrs	Wed 9/20/06	Fri 9/22/06	252																					
255	Secure to floor	12 hrs	Fri 9/22/06	Mon 9/25/06	254																					
256	Install right of ways to unit	64 hrs	Mon 9/25/06	Thu 10/5/06	255																					
257	Connect AC power cables	16 hrs	Thu 10/5/06	Mon 10/9/06	256																					
258	Connect DC output cables	4 hrs	Mon 10/9/06	Tue 10/10/06	257																					
259	Connect all controls cabling	4 hrs	Tue 10/10/06	Tue 10/10/06	258																					
260	Connect water lines	8 hrs	Tue 10/10/06	Wed 10/11/06	259																					
261																										
262	BTS Power Supplies Complete	0 days	Wed 10/11/06	Wed 10/11/06	260																					
263																										
264	Storage Ring	650 days	Mon 10/4/04	Fri 3/30/07																						
265																										
266	Thin Septum Magnet	305 days	Mon 11/22/04	Fri 1/20/06																						
267	EDI	16 wks	Mon 11/22/04	Fri 3/11/05																						
268	Order Supply	0 days	Mon 10/3/05	Mon 10/3/05	267,5,90																					
269	Receive Supply	0 days	Fri 12/2/05	Fri 12/2/05	268FS+45 da																					
270	Power Supplies - KSI replacement	10 days	Mon 12/5/05	Fri 12/16/05	269																					
271	Order Caps	0 days	Mon 10/3/05	Mon 10/3/05																						
272	Receive Caps	0 days	Fri 12/23/05	Fri 12/23/05	271FS+60 da																					
273	Power Supplies- KSI upgrade	10 days	Mon 1/9/06	Fri 1/20/06	96																					
274																										
275	Thick Septum Magnet	320 days	Mon 11/22/04	Fri 2/10/06																						
276	EDI	16 wks	Mon 11/22/04	Fri 3/11/05																						
277	Order Supply	0 days	Mon 10/3/05	Mon 10/3/05	276,5,90																					
278	Receive Supply	0 days	Fri 12/2/05	Fri 12/2/05	277FS+45 da																					
279	Power Supplies - KSI replacement	10 days	Mon 12/5/05	Fri 12/16/05	278																					
280	Order Caps	0 days	Mon 10/3/05	Mon 10/3/05																						
281	Receive Caps	0 days	Fri 12/23/05	Fri 12/23/05	280FS+60 da																					
282	Power Supplies - KSI replacement	10 days	Mon 1/23/06	Fri 2/3/06	273																					

ID	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Mar '05	Apr '05	May '05	Jun '05	Jul '05	Aug '05	Sep '05	Oct '05	Nov '05	Dec '05	Jan '06	Feb '06	Mar '06	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06
283	Power Supplies - replace capacitors	5 days	Mon 2/6/06	Fri 2/10/06	282,281																					
284																										
285	Storage Ring Pulsed Magnets Complete	0 days	Fri 2/10/06	Fri 2/10/06	283,279,270																					
286																										
287	Radiation Protection	521 days	Mon 10/4/04	Mon 10/2/06																						
288	Radiation level minimization	104 days	Mon 12/6/04	Fri 4/29/05																						
289	Fab Bremsstrahlung Shielding	12 wks	Mon 12/6/04	Fri 2/25/05																						
290	Receive DOE Approval for FSAD Change	0 days	Mon 2/7/05	Mon 2/7/05																						
291	Conduct radiation level studies with various mis-settings of	60 edays	Mon 2/28/05	Fri 4/29/05	290,289																					
292	Collimation System	355 days	Mon 10/4/04	Fri 2/10/06																						
293	BTS Double Sided Collimator	95 days	Mon 10/3/05	Fri 2/10/06																						
294	Finalize Design of Double Sided Collimator for BTS	30 days	Mon 10/3/05	Fri 11/11/05	5																					
295	Design Review	0 days	Fri 11/11/05	Fri 11/11/05	294																					
296	Fabricate Double Sided Collimator for BTS	60 days	Mon 11/14/05	Fri 2/3/06	295																					
297	Installation	1 wk	Mon 2/6/06	Fri 2/10/06	296																					
298	SR Vertical Scraper	221 days	Mon 10/4/04	Mon 8/8/05																						
299	Prototype	170 days	Mon 12/6/04	Fri 7/29/05																						
300	Finalize Design of Vertical Scrapers for SR	30 days	Mon 12/6/04	Fri 1/14/05																						
301	Design Review	0 days	Fri 1/14/05	Fri 1/14/05	300																					
302	Fabricate	60 days	Mon 1/17/05	Fri 4/8/05	301																					
303	Installation	1 wk	Mon 5/2/05	Fri 5/6/05	302,396																					
304	Test Operations of Scraper in SR	1 day	Mon 5/9/05	Mon 5/9/05	303																					
305	Repeat radiation level studies	8 wks	Mon 6/6/05	Fri 7/29/05	303,304,397																					
306	Additional Scrapers	221 days	Mon 10/4/04	Mon 8/8/05																						
307	EDI and Documentation	1 wk	Tue 5/10/05	Mon 5/16/05	304																					
308	Fabricate	60 days	Tue 5/17/05	Mon 8/8/05	307																					
309	Installation	1 wk	Mon 10/4/04	Fri 10/8/04																						
310																										
311	Injection Interlock	391 days	Mon 4/4/05	Mon 10/2/06																						
312	Storage Ring Current Monitoring	170 days	Mon 4/4/05	Fri 11/25/05																						
313	Evaluate Test Results of Second Current Monitor	1 day	Mon 4/4/05	Mon 4/4/05		Barry,St																				
314	EDI	10 wks	Wed 6/22/05	Tue 8/30/05	313	Barry,Stier,Scarvie,Mueller																				
315	Fabrication	4 wks	Mon 10/3/05	Fri 10/28/05	314,5																					
316	Installation and Testing	4 wks	Mon 10/31/05	Fri 11/25/05	315																					
317	Injection Energy Monitoring	93 days	Wed 7/20/05	Fri 11/25/05																						
318	EDI	10 wks	Wed 7/20/05	Tue 9/27/05	314FS-6 wks																					
319	Fabrication	4 wks	Mon 10/3/05	Fri 10/28/05	318,5																					
320	Installation and Testing	4 wks	Mon 10/31/05	Fri 11/25/05	319																					
321	Injection System Upgrades	294 days	Wed 8/17/05	Mon 10/2/06																						
322	EDI	15 wks	Wed 8/17/05	Tue 11/29/05	318FS-6 wks																					
323	EDI Update RSS Test Procedure	3 wks	Mon 1/2/06	Fri 1/20/06	322																					
324	Fabrication	4 wks	Wed 11/30/05	Tue 12/27/05	5,322																					
325	Installation and Testing	4 wks	Mon 9/4/06	Fri 9/29/06	324,6																					
326	2 Day RSS Test (exclusive accelerator access)	1 day	Mon 10/2/06	Mon 10/2/06	325,323																					
327	Extraction Trigger Inhibit	324 days	Tue 7/5/05	Fri 9/29/06																						

ID	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Mar '05	Apr '05	May '05	Jun '05	Jul '05	Aug '05	Sep '05	Oct '05	Nov '05	Dec '05	Jan '06	Feb '06	Mar '06	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06
328	EDI	12 wks	Tue 7/5/05	Mon 9/26/05																						
329	Fabrication	2 wks	Mon 10/3/05	Fri 10/14/05	328,5																					
330	Installation and Testing	4 wks	Mon 9/4/06	Fri 9/29/06	329,6																					
331	Beamline/Shutter Interlock	240 days	Mon 3/21/05	Fri 2/17/06																						
332	Evaluate Rad Monitors	4 wks	Mon 3/21/05	Fri 4/15/05																						
333	Procure Rad Monitors/Electronics	4 mons	Tue 7/5/05	Mon 10/24/05	332																					
334	EDI	14 wks	Wed 6/22/05	Tue 9/27/05	332																					
335	Fabrication	14 wks	Mon 10/3/05	Fri 1/6/06	5,334																					
336	Installation and Testing	6 wks	Mon 1/9/06	Fri 2/17/06	335,333																					
337	Interlock Review	1 day	Wed 11/30/05	Wed 11/30/05	314,318,322,;																					
338	Radiation Safety Review	1 day	Thu 12/15/05	Thu 12/15/05	305,314,318,;																					
339	Apply for DOE Approval for Second FSAD Change	2 wks	Fri 12/16/05	Thu 12/29/05	338																					
340	Receive Approval	0 days	Thu 4/20/06	Thu 4/20/06	339FS+16 wk																					
341																										
342	Storage Ring Radiation Protection Complete	0 days	Mon 10/2/06	Mon 10/2/06	340,336,330,;																					
343																										
344	Diagnostics	390 days	Mon 10/3/05	Fri 3/30/07																						
345	Upgrade Cleaning System (Unapproved Scope)	10 days	Fri 12/29/06	Fri 1/12/07	7																					
349	Bunch by Bunch Current Monitor	55 days	Mon 10/3/05	Fri 12/16/05																						
350	Oscilloscope	55 days	Mon 10/3/05	Fri 12/16/05	5																					
351	Specification and Order	1 wk	Mon 10/3/05	Fri 10/7/05	5	Timossi																				
352	Receive Oscilloscope	0 days	Fri 12/2/05	Fri 12/2/05	351FS+8 wks																					
353	Installation	2 wks	Mon 12/5/05	Fri 12/16/05	352																					
354	Visible Bunch Purity Monitor (Unapproved Scope)	130 days	Mon 10/2/06	Fri 3/30/07	7																					
362																										
363	Storage Ring Diagnostics Complete	0 days	Fri 3/30/07	Fri 3/30/07	348,353,358																					
364																										
365	Controls and Timing	522 days	Fri 3/25/05	Mon 3/26/07																						
366	User Gateing Signal	20 wks	Mon 1/2/06	Fri 5/19/06																						
367	Detail Timing Scheme	6 ewks	Tue 1/17/06	Tue 2/28/06	35																					
368	Linac and Booster Timing	20 wks	Wed 3/1/06	Tue 7/18/06	367																					
369	Power Supply Controls	300 days	Mon 8/1/05	Fri 9/22/06																						
370	Network Infrastructure installed	0 days	Thu 9/1/05	Thu 9/1/05																						
371	Develop PS test Procedure Document	1 wk	Mon 10/10/05	Fri 10/14/05	37																					
372	Booster Large PS	232 days	Mon 10/17/05	Tue 9/5/06	371																					
373	Develop Control Specs for Large Magnet Power Supplies	8 wks	Mon 10/17/05	Fri 12/9/05																						
374	Develop Controls	4 wks	Mon 12/12/05	Fri 1/6/06	373																					
375	Test Controls	1 wk	Mon 1/9/06	Fri 1/13/06	374,370																					
376	Final Test After Installation	2 days	Mon 9/4/06	Tue 9/5/06	375,6																					
377	Booster Small PS	255 days	Mon 10/3/05	Fri 9/22/06																						
378	Order IOC IO Boards Parts	2 days	Mon 10/3/05	Tue 10/4/05	412																					
379	Receive, Fabricate & Test IOC IO Boards	3 wks	Wed 10/5/05	Tue 10/25/05	378																					
380	ILC Removal and IOC Installation	1 wk	Mon 9/4/06	Fri 9/8/06	379,6,370																					
381	PS IOC installation complete	0 days	Fri 9/8/06	Fri 9/8/06	380																					
382	Move ILC cabling to IOCs	1 wk	Mon 9/11/06	Fri 9/15/06	381																					



ID	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Mar '05	Apr '05	May '05	Jun '05	Jul '05	Aug '05	Sep '05	Oct '05	Nov '05	Dec '05	Jan '06	Feb '06	Mar '06	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06
383	Final In Place Test	1 wk	Mon 9/18/06	Fri 9/22/06	382																					
384	PS IOC control testing complete	0 days	Fri 9/22/06	Fri 9/22/06	371,382FS+1																					
385	Spec and Design for Corrector Ramping System	4 wks	Mon 8/1/05	Fri 8/26/05	4																					
386	BTS Diagnostics Controls	97 days	Mon 10/3/05	Tue 2/14/06																						
387	B1	5 days	Mon 10/3/05	Fri 10/7/05																						
388	Develop Image Processing	1 wk	Mon 10/3/05	Fri 10/7/05	5																					
389	Develop CRA	1 wk	Mon 10/3/05	Fri 10/7/05	5																					
390	Beam Stopper Controls	1 wk	Wed 2/8/06	Tue 2/14/06	221																					
392	Storage Ring and BTS Collimator Controls	27 days	Fri 3/25/05	Mon 5/2/05																						
393	Motor Drive Avail for Software Test	0 days	Fri 3/25/05	Fri 3/25/05																						
394	IOC Software Development	3 wks	Fri 3/25/05	Thu 4/14/05	393																					
395	Order Boards and Crate	1 day	Fri 4/15/05	Fri 4/15/05	394																					
396	Local Control Test	2 wks	Mon 4/18/05	Fri 4/29/05	302,395																					
397	Install IOC	1 day	Mon 5/2/05	Mon 5/2/05	396																					
398	Bunch Cleaning Controls (Unapproved Scope)	126 days	Mon 10/2/06	Mon 3/26/07	7																					
410	RF Controls	324.94 days	Wed 6/1/05	Tue 8/29/06																						
411	Develop Control Specs for RF Transmitter	15 days	Wed 6/1/05	Tue 6/21/05																						
412	Specification and design complete for RF ramping system	0 days	Tue 6/21/05	Tue 6/21/05	411																					
413	Specification complete for RF transmitter CS interface (Embedded PLC)	0 days	Tue 6/21/05	Tue 6/21/05	412																					
414	Develop Transmitter Controls	2 wks	Tue 5/30/06	Tue 6/13/06	412,413,131																					
415	Develop Interlock Controls	1 wk	Tue 8/22/06	Tue 8/29/06	152																					
416																										
417	Controls and Timing Complete	0 days	Fri 9/22/06	Fri 9/22/06	414,397,384,																					
418																										
419	Accelerator Physics Studies/Commissioning	345 days	Mon 11/22/04	Fri 3/17/06																						
420	Precommissioning Studies	345 days	Mon 11/22/04	Fri 3/17/06																						
421	Injector transfer efficiencies	261 days	Mon 11/22/04	Tue 11/22/05																						
422	Linac beam loading and beam quality	172 edays	Mon 11/22/04	Fri 5/13/05		Nishimura, Kwiatkowski, Byrne																				
423	Booster injection efficiency	120 edays	Sun 3/6/05	Mon 7/4/05		Nishimura, Kwiatkowski, Byrne																				
424	Booster extraction efficiency	90 edays	Sun 4/3/05	Sat 7/2/05		Nishimura, Byrne																				
425	Storage ring injection efficiency/alignment/steering	160 edays	Sun 3/6/05	Sat 8/13/05		Byrne, Steier, Robin																				
426	Learn how to use existing booster BPM's	20 ewks	Tue 7/5/05	Tue 11/22/05		Sannibale, Timossi, Chin, Byrne, Nishimura																				
427	Test ways to use existing kickers for tune measurement in booster	12 ewks	Fri 12/23/05	Fri 3/17/06	207	Barry, Sannibale																				
428	Precommissioning Studies Complete	0 days	Sat 8/13/05	Sat 8/13/05	422,423,424,																					
429																										
430	Ready for Commissioning and Start Up of Full Energy Injector	0 days	Wed 10/11/06	Wed 10/11/06	428,75,105,11																					
431																										
432	Commissioning/Startup	14 edays	Wed 10/11/06	Wed 10/25/06	430																					
433																										
434	Ready for Top Off Commissioning	0 days	Wed 10/25/06	Wed 10/25/06	432,417,342																					
435																										
436	Commissioning of Cleaning System	4 wks	Tue 3/27/07	Mon 4/23/07	196,432																					
437		1 day?	Mon 10/4/04	Mon 10/4/04																						