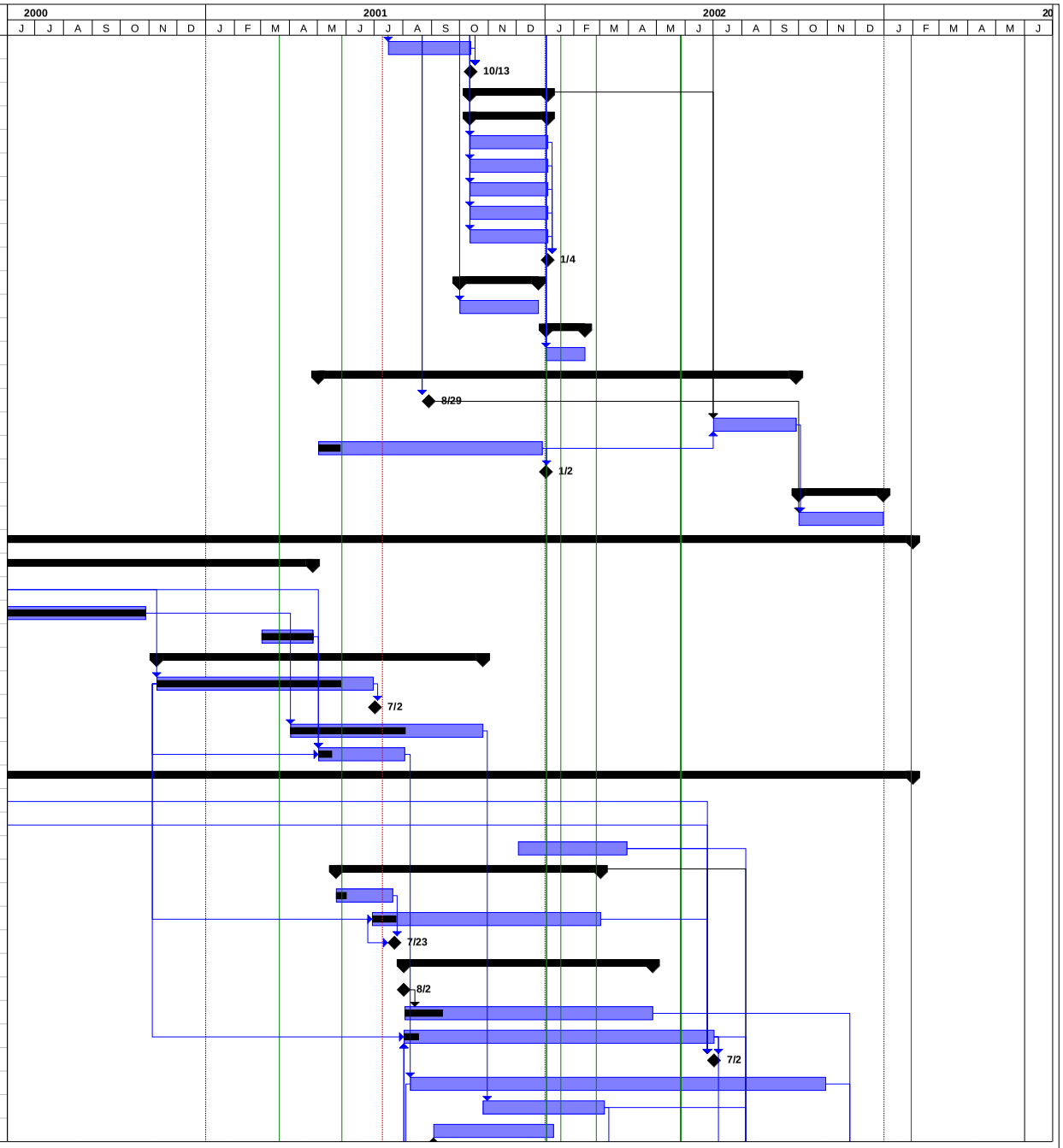
ID	WBS	Task Name	Comple	Early Start	Early Finish	Cost
1						
2	100	**BEAM AT LUJAN CENTER**	0%	Mon 6/29/98	Mon 6/29/98	$0
3	100.1	In 2000	0%	Wed 7/5/00	Fri 12/22/00	$0
4	100.2	In 2001	0%	Fri 6/1/01	Fri 12/28/01	$0
5	100.3	In 2002	0%	Sat 6/1/02	Fri 12/27/02	$0
6	100.4	In 2003	0%	Sun 6/1/03	Mon 12/29/03	$0
7	**0**	**NPDGamma Project**	0%	Mon 6/29/98	Mon 6/29/98	$0
8	**1.0**	**Construction of Experiment**	**38%**	**Fri 1/1/99**	**Thu 6/12/03**	**$1,982,569**
9	**1.1**	**Signal Electronics**	**61%**	**Tue 6/29/99**	**Fri 12/27/02**	**$40,504**
10	**1.1.1**	**Conceptual Design**	**100%**	**Tue 6/29/99**	**Mon 2/12/01**	**$0**
11	1.1.1.1	Development of preamplifier c	100%	Tue 6/29/99	Fri 1/28/00	$0
12	1.1.1.2	Development DC/DC ps	100%	Tue 6/29/99	Mon 2/12/01	$0
13	1.1.1.3	Development of SUM/DIFF an	100%	Tue 6/29/99	Fri 1/28/00	$0
14	**1.1.2**	**Design**	**93%**	**Wed 2/2/00**	**Wed 7/11/01**	**$0**
15	1.1.2.1	Test of prototype pream in bea	100%	Mon 7/24/00	Fri 9/22/00	$0
16	1.1.2.2	Design of preamplifier circuit	100%	Wed 2/2/00	Tue 7/10/01	$0
17	1.1.2.3	Design of SUM/DIFF amplifier	80%	Wed 2/2/00	Tue 7/10/01	$0
18	1.1.2.4	Design of DC/DC ps	100%	Thu 6/29/00	Tue 7/10/01	$0
19	1.1.2.5	Design of preamps completed	0%	Wed 7/11/01	Wed 7/11/01	$0
20	**1.1.3**	**Procurement**	**0%**	**Thu 8/2/01**	**Thu 2/14/02**	**$24,568**
21	1.1.3.1	Procurement of 50 DC/DC ps'	0%	Thu 8/2/01	Wed 11/14/01	$1,328
22	1.1.3.2	Procurement of 50 preamplifie	0%	Mon 10/1/01	Sun 1/13/02	$18,592
23	1.1.3.3	Connectors	0%	Thu 11/1/01	Wed 2/13/02	$1,992
24	1.1.3.4	Cable material (2000')	0%	Thu 11/1/01	Wed 2/13/02	$2,656
25	1.1.3.5	Preamp procurement complet	0%	Thu 2/14/02	Thu 2/14/02	$0
26	**1.1.4**	**Installation, construction, testin**	**0%**	**Tue 10/2/01**	**Fri 8/23/02**	**$14,608**
27	1.1.4.1	Construction of preamlifiers	0%	Mon 1/14/02	Thu 6/20/02	$0
28	1.1.4.2	SUM/DIFF amplifier constructi	0%	Thu 2/14/02	Tue 7/2/02	$10,624
29	1.1.4.3	Testing preamp design in bea	0%	Tue 10/2/01	Thu 12/20/01	$0
30	1.1.4.4	Test of preamps complete	0%	Sat 6/1/02	Thu 8/22/02	$3,984
31	1.1.4.5	One signal channel working	0%	Fri 8/23/02	Fri 8/23/02	$0
32	**1.1.5**	**Commissioning**	**0%**	**Mon 9/2/02**	**Fri 12/27/02**	**$1,328**
33	1.1.5.1	Commissioning signal electror	0%	Mon 9/2/02	Fri 12/27/02	$1,328
34	**1.2**	**Data Processing**	**45%**	**Mon 3/1/99**	**Mon 12/30/02**	**$71,996**
35	**1.2.1**	**Conceptual Design**	**100%**	**Mon 3/1/99**	**Tue 2/29/00**	**$0**
37	**1.2.2**	**Design**	**100%**	**Wed 3/1/00**	**Fri 10/27/00**	**$0**
38	1.2.2.1	Design	100%	Wed 3/1/00	Tue 9/26/00	$0
39	1.2.2.2	Test in beam'00	100%	Mon 8/14/00	Fri 10/27/00	$0
40	**1.2.3**	**Procurement**	**1%**	**Mon 7/16/01**	**Tue 2/12/02**	**$70,242**
41	**1.2.3.1**	**VME Station 2**	**4%**	**Mon 7/16/01**	**Fri 10/12/01**	**$38,273**
42	**1.2.3.1.1**	**VME crate**	**8%**	**Mon 7/16/01**	**Fri 10/12/01**	**$35,889**
43	1.2.3.1.1.1	crate	0%	Mon 7/16/01	Fri 10/12/01	$3,525
44	1.2.3.1.1.2	controller	0%	Mon 7/16/01	Fri 10/12/01	$1,720
45	1.2.3.1.1.3	hard disk/floppy drive	0%	Mon 7/16/01	Fri 10/12/01	$1,594
46	1.2.3.1.1.4	PMC fiber optic fast e	50%	Mon 7/16/01	Fri 10/12/01	$664
47	1.2.3.1.1.5	ALPHI ADM31 ADC's	0%	Mon 7/16/01	Fri 10/12/01	$27,058
48	1.2.3.1.1.6	digital IO module	0%	Mon 7/16/01	Fri 10/12/01	$1,328

Project: Flight Path 12 Construction
Date: Tue 7/10/01

Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone

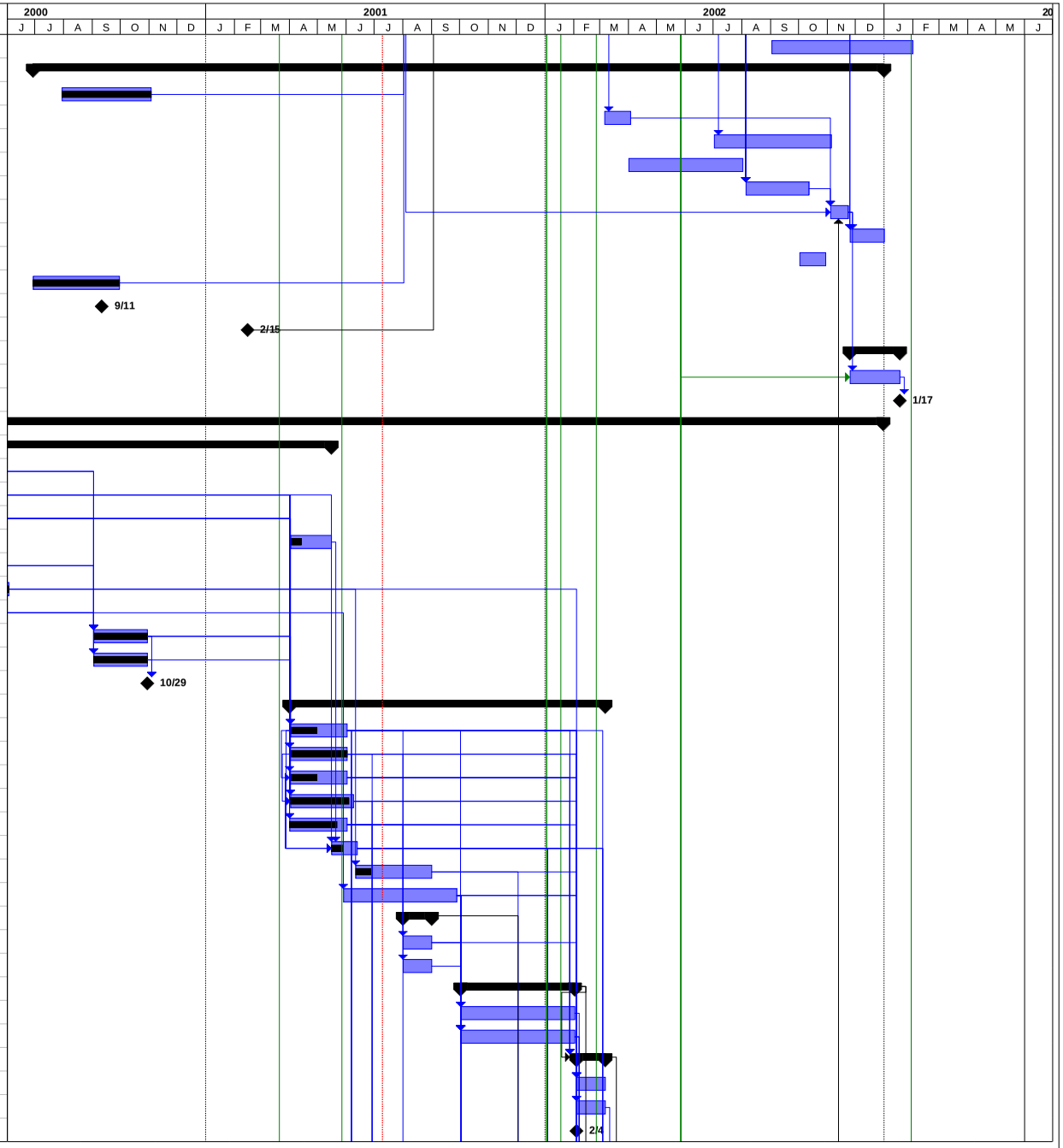
ID	WBS	Task Name	Comple	Early Start	Early Finish	Cost
49	1.2.3.1.2	Function generator	0%	Mon 7/16/01	Fri 10/12/01	$2,384
50	1.2.3.1.3	VME Station 2 complete	0%	Sat 10/13/01	Sat 10/13/01	$0
51	**1.2.3.2**	**VME Station 3**	**0%**	**Fri 10/12/01**	**Thu 1/3/02**	**$8,332**
52	**1.2.3.2.1**	**VME crate**	**0%**	**Fri 10/12/01**	**Thu 1/3/02**	**$8,332**
53	1.2.3.2.1.1	crate	0%	Fri 10/12/01	Thu 1/3/02	$3,325
54	1.2.3.2.1.2	controller	0%	Fri 10/12/01	Thu 1/3/02	$1,623
55	1.2.3.2.1.3	hard disk/floppy drive	0%	Fri 10/12/01	Thu 1/3/02	$1,504
56	1.2.3.2.1.4	PMC fiber optic fast e	0%	Fri 10/12/01	Thu 1/3/02	$627
57	1.2.3.2.1.5	digital IO module	0%	Fri 10/12/01	Thu 1/3/02	$1,253
58	1.2.3.2.2	VME Station 3 complete	0%	Fri 1/4/02	Fri 1/4/02	$0
59	**1.2.3.3**	**Online Analysis Computer**	**0%**	**Mon 10/1/01**	**Mon 12/24/01**	**$18,625**
60	1.2.3.3.1	tape drive	0%	Mon 10/1/01	Mon 12/24/01	$18,625
61	**1.2.3.4**	**Additional Electronics**	**0%**	**Wed 1/2/02**	**Tue 2/12/02**	**$5,012**
62	1.2.3.4.1	NIM modules	0%	Wed 1/2/02	Tue 2/12/02	$5,012
63	**1.2.4**	**Installation, construction, testin**	**7%**	**Wed 5/2/01**	**Fri 9/27/02**	**$0**
64	1.2.4.1	DAQ station #1 complete	0%	Wed 8/29/01	Thu 8/30/01	$0
65	1.2.4.2	Complete stations #2 and #3	0%	Mon 7/1/02	Fri 9/27/02	$0
66	1.2.4.3	Software development	10%	Wed 5/2/01	Fri 12/28/01	$0
67	1.2.4.4	Working DAQ software	0%	Wed 1/2/02	Thu 1/3/02	$0
68	**1.2.5**	**Commissioning**	**0%**	**Tue 10/1/02**	**Mon 12/30/02**	**$1,754**
69	1.2.5.1	Commissioning DAQ	0%	Tue 10/1/02	Mon 12/30/02	$1,754
70	**1.3**	**Detector**	**40%**	**Fri 1/1/99**	**Fri 1/31/03**	**$594,774**
71	**1.3.1**	**Conceptual Design**	**100%**	**Fri 1/1/99**	**Wed 4/25/01**	**$0**
72	1.3.1.1	Conceptual design of detector	100%	Fri 1/1/99	Fri 5/28/99	$0
73	1.3.1.2	Conceptual design of detector	100%	Mon 5/29/00	Fri 10/27/00	$0
74	1.3.1.3	Conceptual design of preamp	100%	Fri 3/2/01	Wed 4/25/01	$0
75	**1.3.2**	**Design**	**63%**	**Thu 11/9/00**	**Thu 10/25/01**	**$3,857**
76	1.3.2.1	Design of CsI detector	85%	Thu 11/9/00	Fri 6/29/01	$0
77	1.3.2.2	Design of detector complete	0%	Mon 7/2/01	Mon 7/2/01	$0
78	1.3.2.3	Design of detector stand	60%	Mon 4/2/01	Thu 10/25/01	$0
79	1.3.2.4	Design preamp housing	15%	Wed 5/2/01	Thu 8/2/01	$3,857
80	**1.3.3**	**Procurement**	**9%**	**Fri 1/1/99**	**Fri 1/31/03**	**$585,905**
81	1.3.3.1	Procurement of 4 CsI crystals	100%	Fri 1/1/99	Mon 3/29/99	$37,184
82	1.3.3.2	Procurement of 6 vacuum phc	0%	Fri 1/1/99	Tue 3/2/99	$4,680
83	1.3.3.3	Fix 4 existing detectors	0%	Mon 12/3/01	Fri 3/29/02	$7,437
84	**1.3.3.4**	**Procure 10 CsI crystals**	**12%**	**Mon 5/21/01**	**Fri 3/1/02**	**$121,512**
85	1.3.3.4.1	Transfer funds to Indiana	20%	Mon 5/21/01	Fri 7/20/01	$0
86	1.3.3.4.2	Procure 10 CsI crystals	10%	Fri 6/29/01	Fri 3/1/02	$121,512
87	1.3.3.4.2	10 CsI x-tals ordered	0%	Mon 7/23/01	Thu 7/26/01	$0
88	**1.3.3.5**	**Procure 36 CsI crystals by I**	**15%**	**Thu 8/2/01**	**Fri 4/26/02**	**$329,400**
89	1.3.3.5.1	Indiana started x-tals proc	0%	Thu 8/2/01	Thu 8/2/01	$0
90	1.3.3.5.2	Procurementof 36 x-tals	15%	Fri 8/3/01	Fri 4/26/02	$329,400
91	1.3.3.6	Procure 60 vacuum photodiod	5%	Thu 8/2/01	Mon 7/1/02	$46,800
92	1.3.3.6.1	Detector procurement comple	0%	Tue 7/2/02	Tue 7/2/02	$0
93	1.3.3.7	Fabricate 48 preamp Al housi	0%	Thu 8/9/01	Tue 10/29/02	$6,374
94	1.3.3.8	Procure detector stand	0%	Fri 10/26/01	Tue 3/5/02	$10,000
95	1.3.3.9	Procure neutron shield Indiana	0%	Mon 9/3/01	Wed 1/9/02	$15,000



Project: Flight Path 12 Construction
Date: Tue 7/10/01

Task | Critical Task | Progress | Milestone | Summary | Rolled Up Task | Rolled Up Critical Task | Rolled Up Milestone | Rolled Up Progress

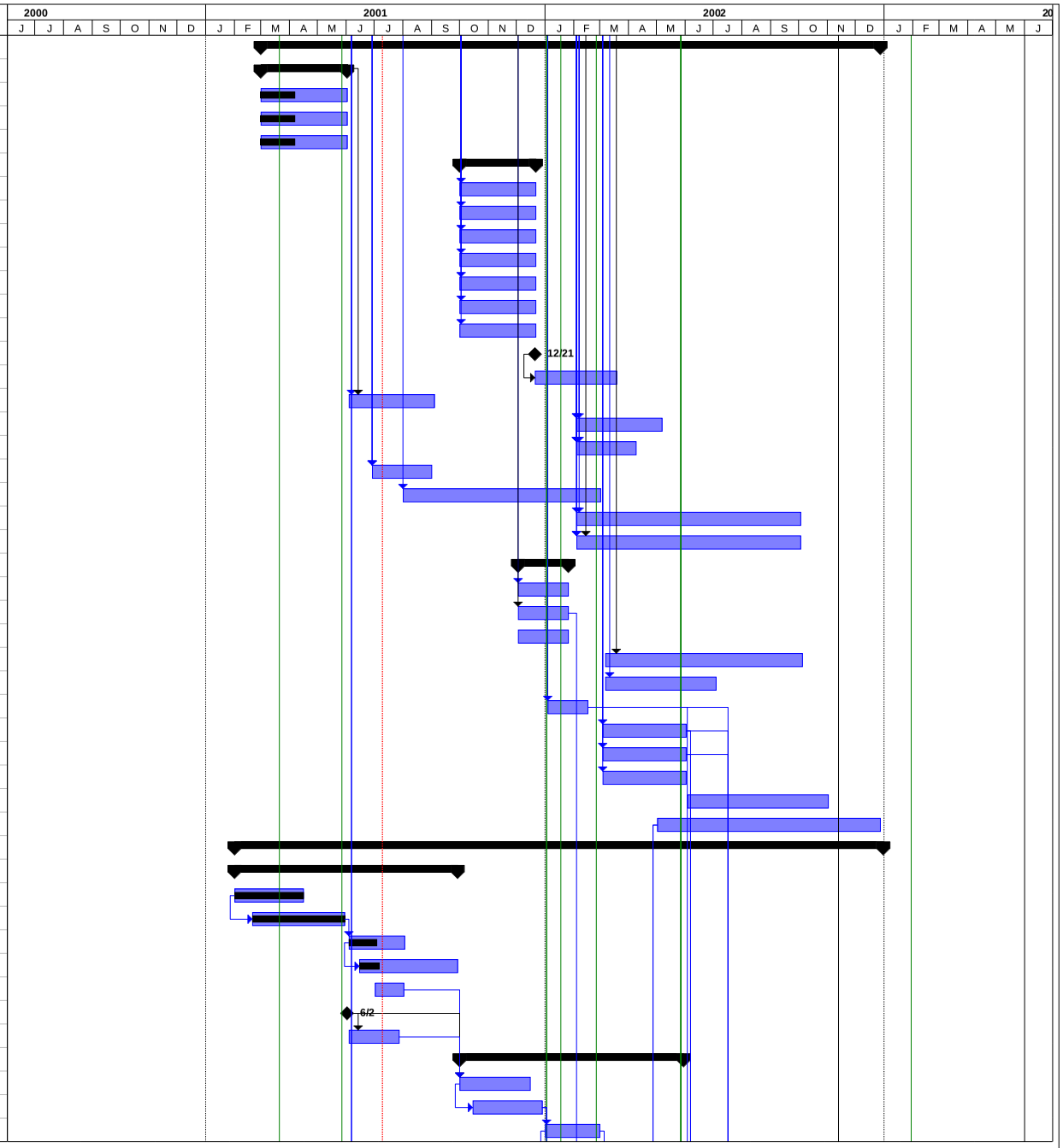
ID	WBS	Task Name	Comple	Early Start	Early Finish	Cost
96	1.3.3.10	Procure neutron shield/Los Al	0%	Mon 9/2/02	Fri 1/31/03	$7,518
97	**1.3.4**	**Installation, construction, testin**	**30%**	**Thu 6/29/00**	**Tue 12/31/02**	**$0**
98	1.3.4.1	Beam test of prototype detect	100%	Sun 7/30/00	Thu 11/2/00	$0
99	1.3.4.2	Test load the stand	0%	Wed 3/6/02	Tue 4/2/02	$0
100	1.3.4.3	Measure ph. elec. yield of vac	0%	Tue 7/2/02	Mon 11/4/02	$0
101	1.3.4.4	Measure on bench efficiency	0%	Mon 4/1/02	Thu 8/1/02	$0
102	1.3.4.5	Integration of detector compor	0%	Mon 8/5/02	Fri 10/11/02	$0
103	1.3.4.6	Install stand in cave	0%	Mon 11/4/02	Fri 11/22/02	$0
104	1.3.4.7	Installation of detector in cave	0%	Mon 11/25/02	Tue 12/31/02	$0
105	1.3.4.8	Install neutron shieldings	0%	Wed 10/2/02	Tue 10/29/02	$0
106	1.3.4.9	Final test of mag. sensitivity o	100%	Thu 6/29/00	Fri 9/29/00	$0
107	1.3.4.10	Submission of IUCF NSF prop	0%	Mon 9/11/00	Mon 9/11/00	$0
108	1.3.4.11	Submission of IUCF MRI prop	0%	Thu 2/15/01	Thu 2/15/01	$0
109	**1.3.5**	**Commissioning**	**0%**	**Mon 11/25/02**	**Fri 1/17/03**	**$5,012**
110	1.3.5.1	Detector commissioning	0%	Mon 11/25/02	Fri 1/17/03	$5,012
111	1.3.5.2	Detector completed	0%	Fri 1/17/03	Fri 1/17/03	$0
112	**1.4**	**Polarizer**	**39%**	**Mon 1/4/99**	**Mon 12/30/02**	**$255,014**
113	**1.4.1**	**Conceptual Design**	**95%**	**Mon 1/4/99**	**Tue 5/15/01**	**$0**
114	1.4.1.1	Conceptual design for broad L	100%	Mon 1/4/99	Wed 6/2/99	$0
115	1.4.1.2	Concep. design of valved cell	100%	Sat 1/1/00	Wed 3/1/00	$0
116	1.4.1.3	Concep. design of sealed cell	100%	Sat 1/1/00	Wed 3/1/00	$0
117	1.4.1.4	Concep. of 3He supply/recove	30%	Mon 4/2/01	Tue 5/15/01	$0
118	1.4.1.5	Concep. design of cell mechai	100%	Thu 3/2/00	Fri 3/31/00	$0
119	1.4.1.6	Conceptual design of narr'ed I	100%	Thu 3/2/00	Fri 6/2/00	$0
120	1.4.1.7	Concep. design of NMR Polar	100%	Thu 3/9/00	Fri 4/7/00	$0
121	1.4.1.8	Beam test of sealed cell	100%	Sat 9/2/00	Sun 10/29/00	$0
122	1.4.1.9	Beam test of valved cell polari	100%	Sat 9/2/00	Sun 10/29/00	$0
123	1.4.1.10	Conceptual design completed	0%	Sun 10/29/00	Sun 10/29/00	$0
124	**1.4.2**	**Design**	**35%**	**Sun 4/1/01**	**Wed 3/6/02**	**$0**
125	1.4.2.1	Design of valved polarizer	45%	Mon 4/2/01	Fri 6/1/01	$0
126	1.4.2.2	Design of sealed polarizer	100%	Sun 4/1/01	Fri 6/1/01	$0
127	1.4.2.3	Design of valved polarizer cell	45%	Sun 4/1/01	Fri 6/1/01	$0
128	1.4.2.4	Design of sealed polarizer cell	90%	Mon 4/2/01	Fri 6/8/01	$0
129	1.4.2.5	Design of oven heating systen	80%	Sun 4/1/01	Fri 6/1/01	$0
130	1.4.2.6	Design of 3He gas handling a	40%	Wed 5/16/01	Tue 6/12/01	$0
131	1.4.2.7	Design of laser system w. nar	20%	Mon 6/11/01	Fri 8/31/01	$0
132	1.4.2.8	Design of freq. scanning NMR	0%	Tue 5/29/01	Thu 9/27/01	$0
133	**1.4.2.9**	**Design of laser system w. b**	**0%**	**Wed 8/1/01**	**Fri 8/31/01**	**$0**
134	1.4.2.9.1	Design laser system for s	0%	Wed 8/1/01	Fri 8/31/01	$0
135	1.4.2.9.2	Design laser system for v	0%	Wed 8/1/01	Fri 8/31/01	$0
136	**1.4.2.10**	**Design of NMR drive coils**	**0%**	**Tue 10/2/01**	**Fri 2/1/02**	**$0**
137	1.4.2.10.1	Design of NMR coils for v	0%	Tue 10/2/01	Fri 2/1/02	$0
138	1.4.2.10.2	Design of NMR coils for s	0%	Tue 10/2/01	Fri 2/1/02	$0
139	**1.4.2.11**	**Design of mechanical suppo**	**0%**	**Mon 2/4/02**	**Wed 3/6/02**	**$0**
140	1.4.2.11.1	Design mechanical suppo	0%	Mon 2/4/02	Wed 3/6/02	$0
141	1.4.2.11.2	Design mechanical suppo	0%	Mon 2/4/02	Wed 3/6/02	$0
142	1.4.2.12	Design of polarizer completed	0%	Mon 2/4/02	Mon 2/4/02	$0



Project: Flight Path 12 Construction
Date: Tue 7/10/01

Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone

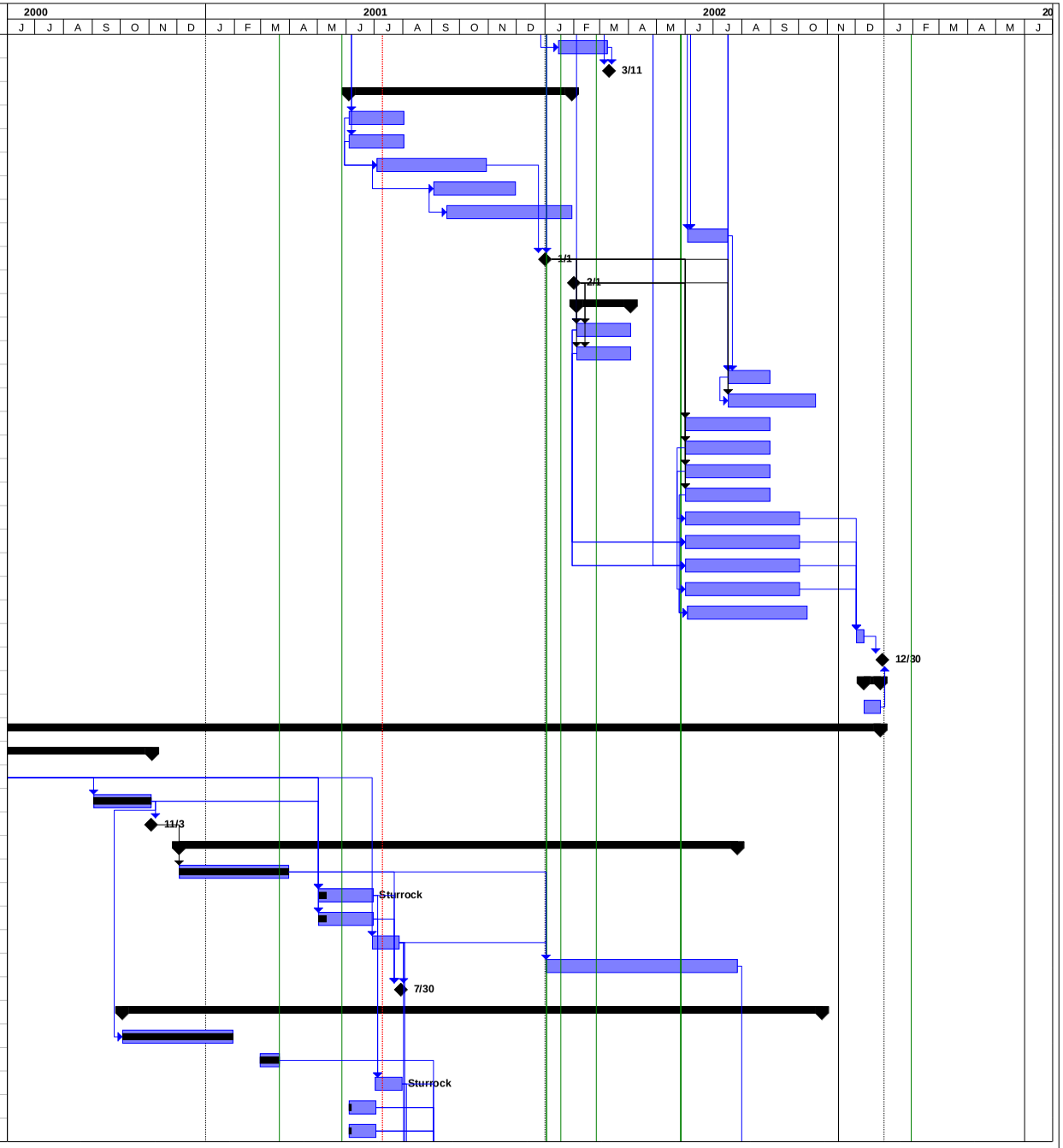
ID	WBS	Task Name	Comple	Early Start	Early Finish	Cost
143	**1.4.3**	**Procurement**	**2%**	**Thu 3/1/01**	**Fri 12/27/02**	**$220,049**
144	**1.4.3.1**	**Procure cell material for sea**	**40%**	**Thu 3/1/01**	**Fri 6/1/01**	**$4,300**
145	1.4.3.1.1	Glass - GE180 and cornir	40%	Thu 3/1/01	Fri 6/1/01	$3,000
146	1.4.3.1.2	Ultrapure 3He and Nitroge	40%	Thu 3/1/01	Fri 6/1/01	$1,000
147	1.4.3.1.3	Rubidium metal ampules	40%	Thu 3/1/01	Fri 6/1/01	$300
148	**1.4.3.2**	**Procure NMR electronics**	**0%**	**Mon 10/1/01**	**Fri 12/21/01**	**$32,328**
149	1.4.3.2.1	DAQ Computer	0%	Mon 10/1/01	Fri 12/21/01	$3,759
150	1.4.3.2.2	Lock-In Amplifier	0%	Mon 10/1/01	Fri 12/21/01	$6,265
151	1.4.3.2.3	RF Generators (3 or 1+du	0%	Mon 10/1/01	Fri 12/21/01	$7,894
152	1.4.3.2.4	Pre Amplifiers	0%	Mon 10/1/01	Fri 12/21/01	$5,012
153	1.4.3.2.5	Power Amplifier	0%	Mon 10/1/01	Fri 12/21/01	$6,265
154	1.4.3.2.6	Data Acquisition Card	0%	Mon 10/1/01	Fri 12/21/01	$1,880
155	1.4.3.2.7	GPIB Card	0%	Mon 10/1/01	Fri 12/21/01	$1,253
156	1.4.3.2.8	NMR electronics procurec	0%	Fri 12/21/01	Fri 12/21/01	$0
157	1.4.3.3	Integration of NMR electronics	0%	Fri 12/21/01	Mon 3/18/02	$0
158	1.4.3.4	Fabrication of SEOP cells	0%	Mon 6/4/01	Mon 9/3/01	$3,000
159	1.4.3.5	Procure electronics/optics for	0%	Mon 2/4/02	Mon 5/6/02	$2,000
160	1.4.3.6	Procure oven and pickup coils	0%	Mon 2/4/02	Mon 4/8/02	$2,000
161	1.4.3.7	Procure oven material for seal	0%	Fri 6/29/01	Fri 8/31/01	$250
162	1.4.3.8	Procure oven heater and cont	0%	Wed 8/1/01	Fri 3/1/02	$2,000
163	1.4.3.9	Procure pick-up coil for sealec	0%	Mon 2/4/02	Wed 10/2/02	$400
164	1.4.3.10	Procure NMR drive coil	0%	Mon 2/4/02	Wed 10/2/02	$627
165	**1.4.3.11**	**Procure laser system compo**	**0%**	**Mon 12/3/01**	**Fri 1/25/02**	**$10,651**
166	1.4.3.11.1	Procure optics for narr'd la	0%	Mon 12/3/01	Fri 1/25/02	$6,265
167	1.4.3.11.2	Procure optics for broad L	0%	Mon 12/3/01	Fri 1/25/02	$4,386
168	1.4.3.12	Procure electronics for narrow	0%	Mon 12/3/01	Fri 1/25/02	$2,506
169	1.4.3.13	Procure support materials	0%	Thu 3/7/02	Fri 10/4/02	$627
170	1.4.3.14	Procure materials for narrowe	0%	Thu 3/7/02	Wed 7/3/02	$3,759
171	1.4.3.15	Procure gas handling system	0%	Fri 1/4/02	Fri 2/15/02	$7,000
172	1.4.3.16	Procure He recovery	0%	Mon 3/4/02	Sat 6/1/02	$12,530
173	1.4.3.17	Procure vacuum pumps	0%	Mon 3/4/02	Sat 6/1/02	$8,771
174	1.4.3.18	Procure misc. supplies for vak	0%	Mon 3/4/02	Sat 6/1/02	$2,000
175	1.4.3.19	Procure He gas for valved cell	0%	Mon 6/3/02	Fri 11/1/02	$50,120
176	1.4.3.20	Procure broad band laser dioc	0%	Thu 5/2/02	Fri 12/27/02	$75,180
177	**1.4.4**	**Installation, construction, testin**	**8%**	**Thu 2/1/01**	**Mon 12/30/02**	**$30,965**
178	**1.4.4.1**	**Construction of sealed cells**	**66%**	**Thu 2/1/01**	**Fri 9/28/01**	**$4,800**
179	1.4.4.1.1	Fabrication of 1/4 scale ce	100%	Thu 2/1/01	Sun 4/15/01	$0
180	1.4.4.1.2	Testing of 1/4 scale cells	100%	Tue 2/20/01	Tue 5/29/01	$0
181	1.4.4.1.3	Fabrication of 4 full size c	50%	Mon 6/4/01	Thu 8/2/01	$0
182	1.4.4.1.4	Testing of 4 full size cells	20%	Fri 6/15/01	Fri 9/28/01	$0
183	1.4.4.2	Decision of sealed cell geome	0%	Mon 7/2/01	Wed 8/1/01	$0
184	1.4.4.3	First full sized sealed cell with	0%	Sat 6/2/01	Sat 6/2/01	$0
185	1.4.4.4	High laser power polarization	0%	Mon 6/4/01	Fri 7/27/01	$0
186	**1.4.4.3**	**Construction of final sealed**	**0%**	**Mon 10/1/01**	**Wed 5/29/02**	**$6,265**
187	1.4.4.3.1	Construction of three seal	0%	Mon 10/1/01	Sat 12/15/01	$0
188	1.4.4.3.2	Testing of cells	0%	Mon 10/15/01	Fri 12/28/01	$0
189	1.4.4.3.3	Construction of three addi	0%	Tue 1/1/02	Thu 2/28/02	$6,265



Project: Flight Path 12 Construction
Date: Tue 7/10/01

Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone

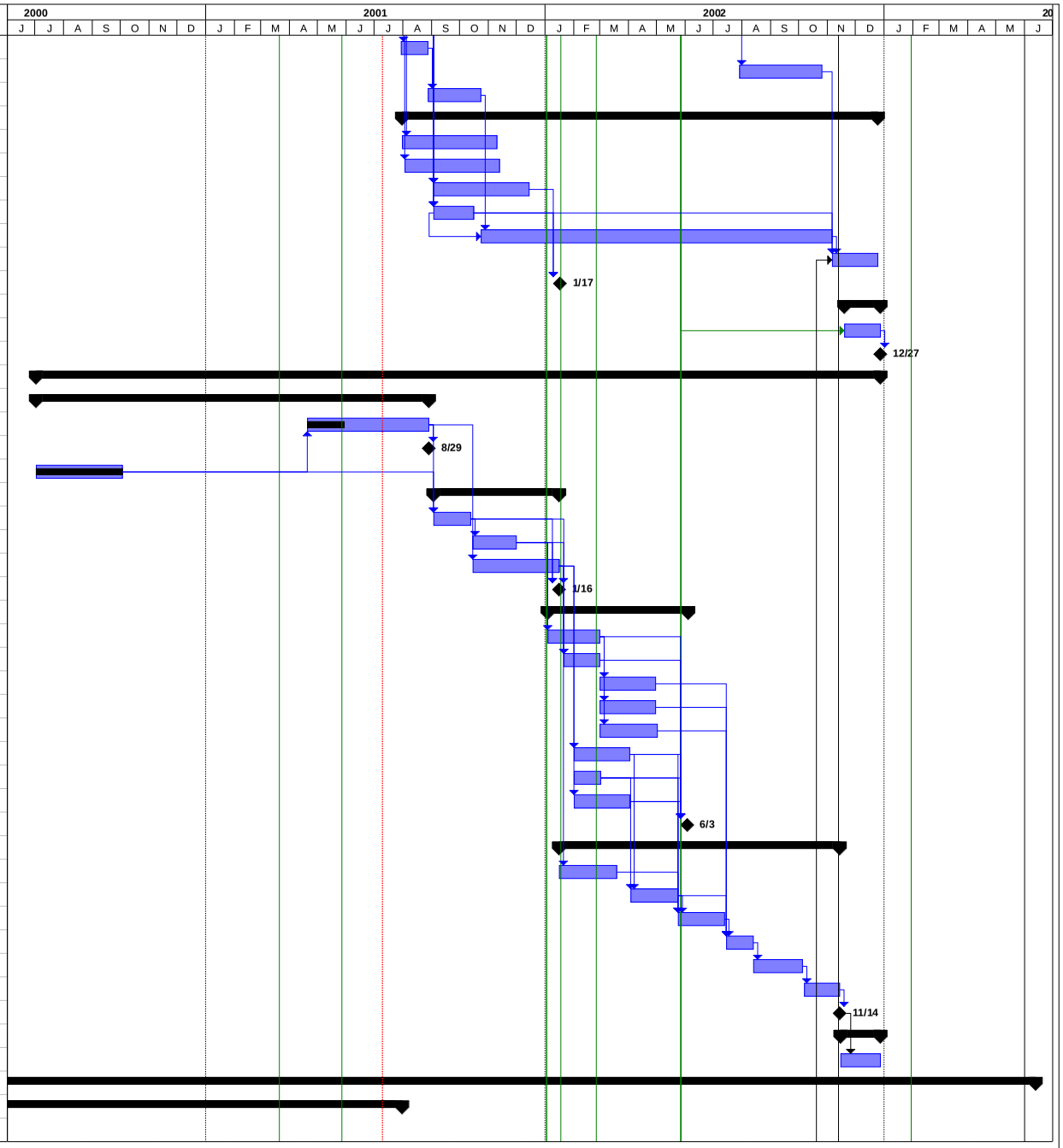
ID	WBS	Task Name	Comple	Early Start	Early Finish	Cost
190	1.4.4.3.4	Testing of additional cells	0%	Tue 1/15/02	Fri 3/8/02	$0
191	1.4.4.3.5	Construction and testing c	0%	Mon 3/11/02	Wed 5/29/02	$0
192	**1.4.4.4**	**Construction of valved cells**	**0%**	**Mon 6/4/01**	**Tue 1/29/02**	**$9,000**
193	1.4.4.4.1	Construction of 3 valved c	0%	Mon 6/4/01	Wed 8/1/01	$3,000
194	7.4.4.6.2	Construction of pump cell:	0%	Mon 6/4/01	Wed 8/1/01	$4,000
195	1.4.4.4.3	Testing 3 valved cells	0%	Wed 7/4/01	Mon 10/29/01	$0
196	1.4.4.4.4	Construction of additional	0%	Mon 9/3/01	Thu 11/29/01	$2,000
197	1.4.4.4.5	Testing of additional valve	0%	Mon 9/17/01	Tue 1/29/02	$0
198	1.4.4.5	Construction of 3He gas hand	0%	Mon 6/3/02	Tue 7/16/02	$0
199	1.4.4.6	Working group decision for fin	0%	Tue 1/1/02	Wed 1/2/02	$0
200	1.4.4.7	Working group decision for las	0%	Fri 2/1/02	Fri 2/1/02	$0
201	**1.4.4.8**	**Laser system construction**	**0%**	**Mon 2/4/02**	**Tue 4/2/02**	**$0**
202	1.4.4.8.1	Construction of optics for	0%	Mon 2/4/02	Tue 4/2/02	$0
203	1.4.4.8.2	Constr. of optics for narro'	0%	Mon 2/4/02	Tue 4/2/02	$0
204	1.4.4.9	Testing gas handling system	0%	Wed 7/17/02	Fri 8/30/02	$0
205	1.4.4.10	Integration of polarizer compo	0%	Wed 7/17/02	Fri 10/18/02	$0
206	1.4.4.11	Fabrication of oven for sealed	0%	Sat 6/1/02	Fri 8/30/02	$2,400
207	1.4.4.12	Constr. of oven heater and co	0%	Sat 6/1/02	Fri 8/30/02	$2,000
208	1.4.4.13	Constr. of stand for polarizer a	0%	Sat 6/1/02	Fri 8/30/02	$1,200
209	1.4.4.14	Constr. of NMR drive coils anc	0%	Sat 6/1/02	Fri 8/30/02	$500
210	1.4.4.15	Testing of heating system	0%	Sat 6/1/02	Tue 10/1/02	$0
211	1.4.4.16	Testing of optics for valved ce	0%	Sat 6/1/02	Tue 10/1/02	$0
212	1.4.4.17	Testing of optics for sealed ce	0%	Sat 6/1/02	Tue 10/1/02	$0
213	1.4.4.18	Testing of NMR system	0%	Sat 6/1/02	Tue 10/1/02	$0
214	1.4.4.19	Testing of frequency scanning	0%	Mon 6/3/02	Wed 10/9/02	$0
215	1.4.4.20	Installation of 3He system to b	0%	Mon 12/2/02	Mon 12/9/02	$0
216	1.4.4.21	Polarizer completed	0%	Mon 12/30/02	Mon 12/30/02	$0
217	**1.4.5**	**Commissioning**	**0%**	**Tue 12/10/02**	**Fri 12/27/02**	**$4,000**
218	1.4.5.1	Commissioning	0%	Tue 12/10/02	Fri 12/27/02	$4,000
219	**1.5**	**Flipper**	**40%**	**Mon 5/31/99**	**Fri 12/27/02**	**$16,225**
220	**1.5.1**	**Conceptual Design**	**99%**	**Mon 5/31/99**	**Fri 11/3/00**	**$0**
221	1.5.1.1	Conceptual design	100%	Mon 5/31/99	Fri 10/29/99	$0
222	1.5.1.2	Testing of spin flipper prototyp	100%	Sat 9/2/00	Thu 11/2/00	$0
223	1.5.1.3	Flipper concept complete	0%	Fri 11/3/00	Fri 11/3/00	$0
224	**1.5.2**	**Design**	**29%**	**Sun 12/3/00**	**Fri 7/26/02**	**$4,056**
225	1.5.2.1	Design of flipper	100%	Sun 12/3/00	Fri 3/30/01	$0
226	1.5.2.2	Design of switching electronic	15%	Wed 5/2/01	Fri 6/29/01	$0
227	1.5.2.3	Design of control electronics	15%	Wed 5/2/01	Fri 6/29/01	$2,424
228	1.5.2.4	Design of new coil and dummy	0%	Fri 6/29/01	Fri 7/27/01	$0
229	1.5.2.5	Design of stand	0%	Wed 1/2/02	Fri 7/26/02	$1,632
230	1.5.2.6	Design complete	0%	Mon 7/30/01	Mon 7/30/01	$0
231	**1.5.3**	**Procurement**	**36%**	**Tue 10/3/00**	**Fri 10/25/02**	**$6,850**
232	1.5.3.1	Procurement of prototype	100%	Tue 10/3/00	Mon 1/29/01	$0
233	1.5.3.2	Procure audio amplifier	100%	Wed 2/28/01	Tue 3/20/01	$0
234	1.5.3.3	Procure control & switching el	0%	Mon 7/2/01	Mon 7/30/01	$1,328
235	1.5.3.4	Procure shielded RF cable	10%	Mon 6/4/01	Mon 7/2/01	$664
236	1.5.3.5	Procure RF connectors	10%	Mon 6/4/01	Mon 7/2/01	$266



Project: Flight Path 12 Construction
Date: Tue 7/10/01

Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone

ID	WBS	Task Name	Comple	Early Start	Early Finish	Cost
237	1.5.3.6	Procure coil materials	0%	Mon 7/30/01	Mon 8/27/01	$664
238	1.5.3.7	Fabrication of stand	0%	Mon 7/29/02	Fri 10/25/02	$2,296
239	1.5.3.8	Rewind coil	0%	Tue 8/28/01	Tue 10/23/01	$1,632
240	**1.5.4**	**Installation, construction, testin**	**0%**	**Tue 7/31/01**	**Tue 12/24/02**	**$4,692**
241	1.5.4.1	Constr. of control & switching	0%	Tue 7/31/01	Fri 11/9/01	$3,060
242	1.5.4.2	Construction of dummy coil	0%	Fri 8/3/01	Mon 11/12/01	$1,632
243	1.5.4.3	Amplifier tests	0%	Mon 9/3/01	Fri 12/14/01	$0
244	1.5.4.4	Testing of control & switching	0%	Mon 9/3/01	Mon 10/15/01	$0
245	1.5.4.5	Bench test of spin flipper	0%	Wed 10/24/01	Tue 11/5/02	$0
246	1.5.4.6	Installation spin flipper to fp12	0%	Wed 11/6/02	Tue 12/24/02	$0
247	1.5.4.7	Spin flipper built	0%	Thu 1/17/02	Thu 1/17/02	$0
248	**1.5.5**	**Commissioning**	**0%**	**Tue 11/19/02**	**Fri 12/27/02**	**$627**
249	1.5.5.1	Commissioning	0%	Tue 11/19/02	Fri 12/27/02	$627
250	1.5.5.2	Flipper complete	0%	Fri 12/27/02	Fri 12/27/02	$0
251	**1.6**	**Guide Field**	**24%**	**Sun 7/2/00**	**Fri 12/27/02**	**$47,200**
252	**1.6.1**	**Conceptual Design**	**59%**	**Sun 7/2/00**	**Wed 8/29/01**	**$0**
253	1.6.1.1	Field calculations	30%	Fri 4/20/01	Tue 8/28/01	$0
254	1.6.1.2	Field caluclations completed	0%	Wed 8/29/01	Wed 8/29/01	$0
255	1.6.1.3	Testing of guide field prototyp	100%	Sun 7/2/00	Mon 10/2/00	$0
256	**1.6.2**	**Design**	**0%**	**Mon 9/3/01**	**Wed 1/16/02**	**$15,000**
257	1.6.2.1	Design of field coils	0%	Mon 9/3/01	Fri 10/12/01	$5,000
258	1.6.2.2	Design of coil frame and stanc	0%	Mon 10/15/01	Fri 11/30/01	$5,000
259	1.6.2.3	Design of field stabilization	0%	Mon 10/15/01	Tue 1/15/02	$5,000
260	1.6.2.4	Guide field design complete	0%	Wed 1/16/02	Wed 1/16/02	$0
261	**1.6.3**	**Procurement**	**0%**	**Fri 1/4/02**	**Mon 6/3/02**	**$22,000**
262	1.6.3.1	Procure frame and stand mate	0%	Fri 1/4/02	Thu 2/28/02	$1,000
263	1.6.3.2	Procure wires	0%	Mon 1/21/02	Thu 2/28/02	$1,000
264	1.6.3.3	Fabrication of coil frame	0%	Fri 3/1/02	Mon 4/29/02	$4,000
265	1.6.3.4	Fabricate stand	0%	Fri 3/1/02	Mon 4/29/02	$2,000
266	1.6.3.5	Winding coils	0%	Fri 3/1/02	Wed 5/1/02	$3,000
267	1.6.3.6	Procurement of power supply	0%	Fri 2/1/02	Mon 4/1/02	$5,000
268	1.6.3.7	Procurement of power cables	0%	Fri 2/1/02	Fri 3/1/02	$1,000
269	1.6.3.8	Procurement of magnetomete	0%	Fri 2/1/02	Mon 4/1/02	$5,000
270	1.6.3.9	Guide field procurement comp	0%	Mon 6/3/02	Mon 6/3/02	$0
271	**1.6.4**	**Installation, construction, testin**	**0%**	**Wed 1/16/02**	**Thu 11/14/02**	**$9,000**
272	1.6.4.1	Construction of field stabilizing	0%	Wed 1/16/02	Mon 3/18/02	$2,000
273	1.6.4.2	Testing of power supply and c	0%	Wed 4/3/02	Thu 5/23/02	$1,000
274	1.6.4.3	Testing of field stabilization loc	0%	Fri 5/24/02	Fri 7/12/02	$1,000
275	1.6.4.4	Outside cave field testing	0%	Mon 7/15/02	Mon 8/12/02	$1,000
276	1.6.4.5	Installation in cave and testing	0%	Tue 8/13/02	Fri 10/4/02	$3,000
277	1.6.4.6	Field tests inside cave	0%	Mon 10/7/02	Wed 11/13/02	$1,000
278	1.6.4.7	Guide field complete	0%	Thu 11/14/02	Thu 11/14/02	$0
279	**1.6.5**	**Commissioning**	**0%**	**Fri 11/15/02**	**Fri 12/27/02**	**$1,200**
280	1.6.5.1	Commissioning	0%	Fri 11/15/02	Fri 12/27/02	$1,200
281	**1.7**	**Target**	**44%**	**Fri 1/15/99**	**Thu 6/12/03**	**$321,153**
282	**1.7.1**	**Conceptual Design**	**66%**	**Fri 1/15/99**	**Mon 7/30/01**	**$33,292**
283	1.7.1.1	Conceptual design of tgt	100%	Fri 1/15/99	Fri 5/14/99	$0



Project: Flight Path 12 Construction
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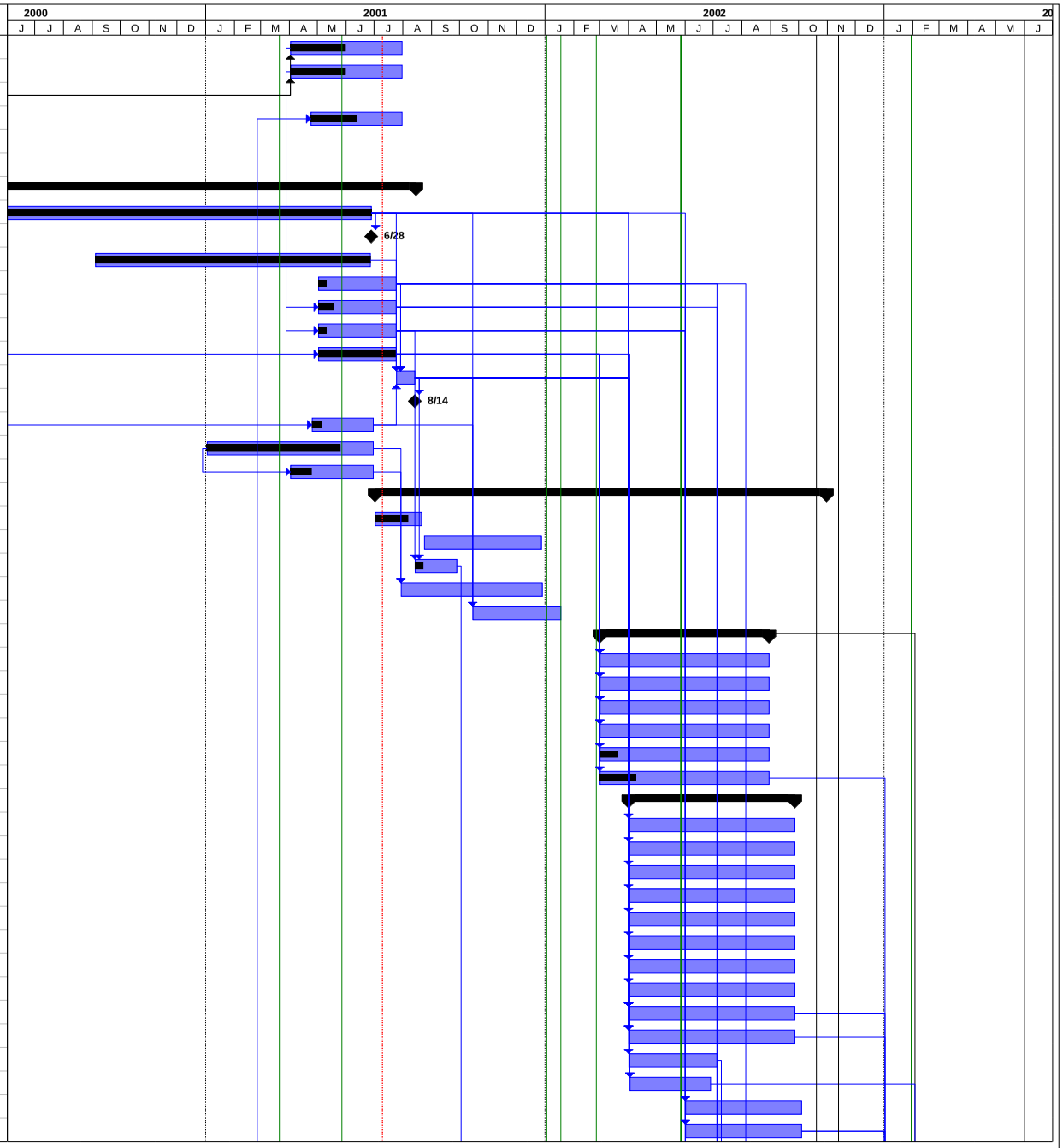
Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone

ID	WBS	Task Name	Comple	Early Start	Early Finish	Cost
284	1.7.1.2	Concep. design of hydrogen r	50%	Mon 4/2/01	Mon 7/30/01	$4,300
285	1.7.1.3	Conceptual design of hydroge	50%	Mon 4/2/01	Mon 7/30/01	$1,433
286	1.7.1.4	Review of concep. tgt design a	100%	Tue 5/18/99	Wed 5/19/99	$15,029
287	1.7.1.5	Concept of tgt footprint in cave	50%	Tue 4/24/01	Mon 7/30/01	$0
288	1.7.1.6	ARES preliminary tgt vessel c	100%	Mon 4/10/00	Mon 5/15/00	$12,530
289	1.7.1.7	LH2 target meeting at IUCF	0%	Thu 7/15/99	Fri 7/16/99	$0
290	**1.7.2**	**Design**	**77%**	**Mon 5/17/99**	**Tue 8/14/01**	**$48,728**
291	1.7.2.1	Engineering design of target	100%	Mon 5/17/99	Wed 6/27/01	$0
292	1.7.2.1.1	Target engineering design cor	0%	Thu 6/28/01	Thu 6/28/01	$0
293	1.7.2.2	Design of tgt monitoring electr	100%	Mon 9/4/00	Tue 6/26/01	$0
294	1.7.2.3	Design of exhaust line	10%	Wed 5/2/01	Tue 7/24/01	$5,786
295	1.7.2.4	Design of hydrogen relief man	20%	Wed 5/2/01	Tue 7/24/01	$5,786
296	1.7.2.5	Design of hydrogen supply sy	10%	Wed 5/2/01	Tue 7/24/01	$3,857
297	1.7.2.6	Design of tgt vacuum system	100%	Wed 5/2/01	Tue 7/24/01	$0
298	1.7.2.7	Safety review of tgt design an	0%	Wed 7/25/01	Mon 8/13/01	$14,504
299	1.7.2.7.1	Passed taget design safety re	0%	Tue 8/14/01	Tue 8/14/01	$0
300	1.7.2.8	Engineering analysis of tgt ves	15%	Wed 4/25/01	Fri 6/29/01	$18,795
301	1.7.2.9	Design of stand	80%	Tue 1/2/01	Fri 6/29/01	$0
302	1.7.2.10	Engineering of stand	25%	Mon 4/2/01	Fri 6/29/01	$0
303	**1.7.3**	**Procurement**	**4%**	**Mon 7/2/01**	**Wed 10/30/02**	**$188,731**
304	1.7.3.1	Procurement of CVI refrigerat	70%	Mon 7/2/01	Mon 8/20/01	$29,000
305	1.7.3.2	Procurement of He-jacketed v	0%	Fri 8/24/01	Thu 12/27/01	$20,000
306	1.7.3.3	Procurement of gas handling s	20%	Tue 8/14/01	Thu 9/27/01	$10,000
307	1.7.3.4	Procurement of target stand	0%	Mon 7/30/01	Fri 12/28/01	$8,000
308	1.7.3.5	Procurement of target vessel	0%	Mon 10/15/01	Thu 1/17/02	$20,000
309	**1.7.3.6**	**Procure vacuum of target**	**0%**	**Fri 3/1/02**	**Thu 8/29/02**	**$11,905**
310	1.7.3.6.1	Procure turbo station	0%	Fri 3/1/02	Thu 8/29/02	$7,518
311	1.7.3.6.2	Procure vacuum gauge	0%	Fri 3/1/02	Thu 8/29/02	$1,880
312	1.7.3.6.3	Procure electrical valve fo	0%	Fri 3/1/02	Thu 8/29/02	$1,880
313	1.7.3.6.4	Procure vacuum lines	0%	Fri 3/1/02	Thu 8/29/02	$627
314	1.7.3.7	Procure other tgt related items	10%	Fri 3/1/02	Thu 8/29/02	$6,265
315	1.7.3.8	Procurement of target instrum	20%	Fri 3/1/02	Thu 8/29/02	$30,000
316	**1.7.3.9**	**Procure hydrogen safety ite**	**0%**	**Mon 4/1/02**	**Thu 9/26/02**	**$22,931**
317	1.7.3.9.1	Construction of monitoring	0%	Mon 4/1/02	Thu 9/26/02	$1,880
318	1.7.3.9.2	Procure hydrogen monitor	0%	Mon 4/1/02	Thu 9/26/02	$1,880
319	1.7.3.9.3	Procure oxygen monitors	0%	Mon 4/1/02	Thu 9/26/02	$1,880
320	1.7.3.9.4	Procure hydrogen sensor	0%	Mon 4/1/02	Thu 9/26/02	$1,253
321	1.7.3.9.5	Procure oxygen sensor in	0%	Mon 4/1/02	Thu 9/26/02	$1,253
322	1.7.3.9.6	Procure hydrogen proof fa	0%	Mon 4/1/02	Thu 9/26/02	$3,759
323	1.7.3.9.7	Procure hydrogen proof e	0%	Mon 4/1/02	Thu 9/26/02	$1,002
324	1.7.3.9.8	Procure hydrogen proof lig	0%	Mon 4/1/02	Thu 9/26/02	$10,024
325	1.7.3.10	Procure vent line relief valves	0%	Mon 4/1/02	Thu 9/26/02	$3,759
326	1.7.3.11	Procure vent line check valves	0%	Mon 4/1/02	Thu 9/26/02	$3,007
327	1.7.3.12	Prepare exhaust line installatio	0%	Mon 4/1/02	Thu 7/4/02	$4,465
328	1.7.3.13	Procure RGA	0%	Tue 4/2/02	Thu 6/27/02	$6,265
329	1.7.3.14	Procure hydrogen cleaning ma	0%	Sat 6/1/02	Thu 10/3/02	$1,504
330	1.7.3.15	Procure He manifold for exhau	0%	Sat 6/1/02	Thu 10/3/02	$1,253



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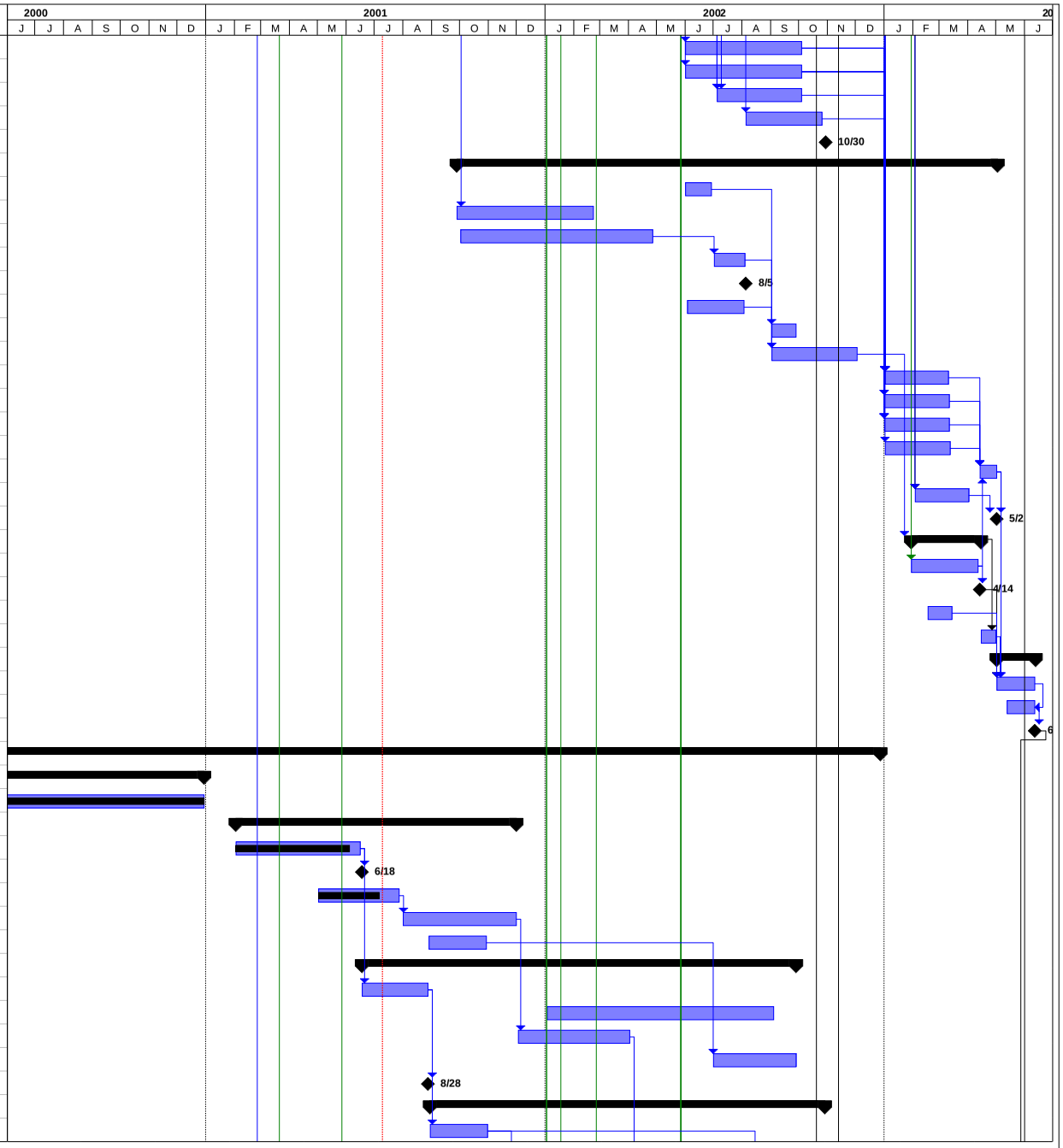
Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone

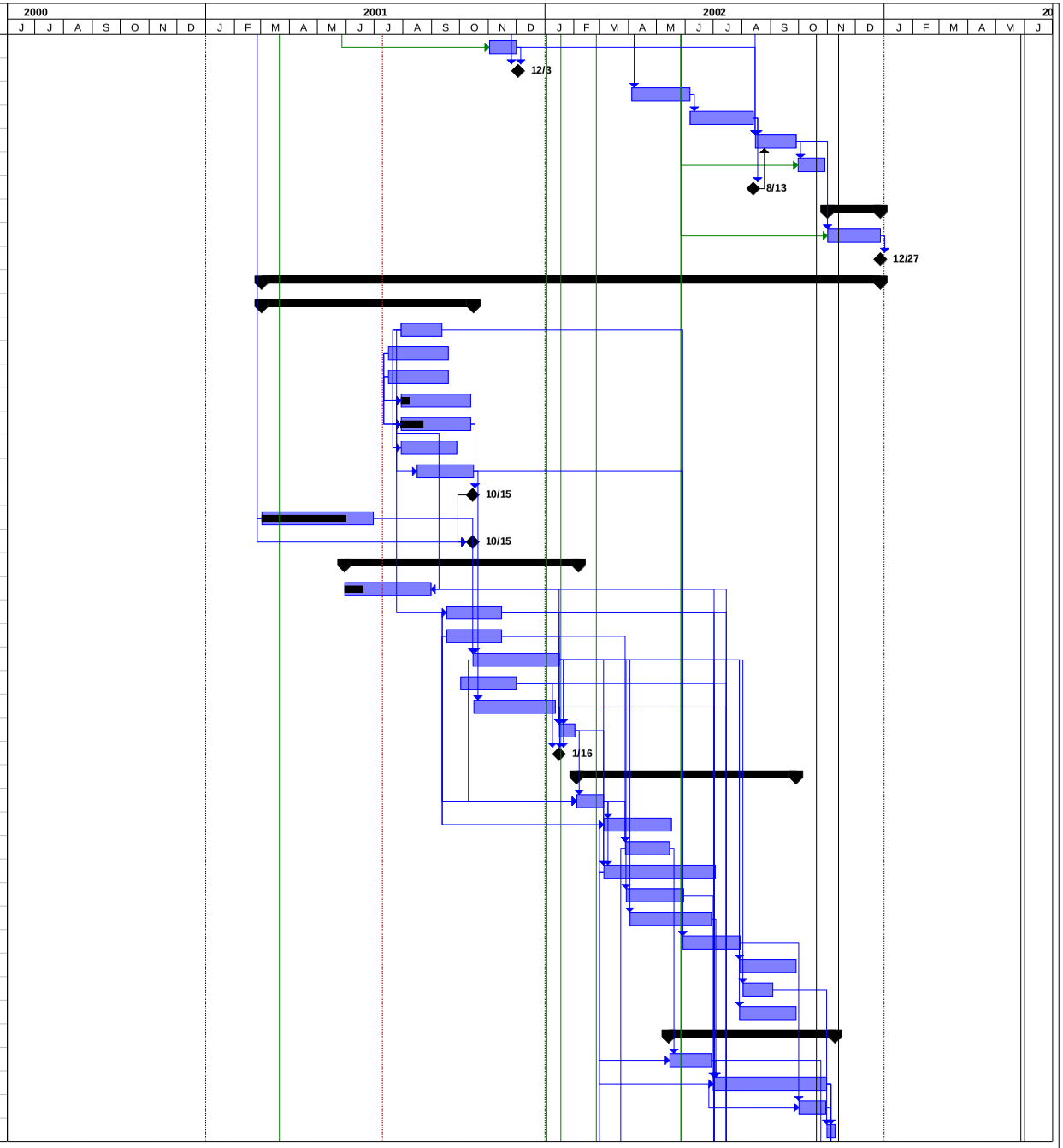
ID	WBS	Task Name	Comple	Early Start	Early Finish	Cost
331	1.7.3.16	Procure hydrogen supply line	0%	Sat 6/1/02	Thu 10/3/02	$2,506
332	1.7.3.17	Procure hydrogen bottle stanc	0%	Sat 6/1/02	Thu 10/3/02	$3,759
333	1.7.3.18	Contract exhaust line construc	0%	Fri 7/5/02	Thu 10/3/02	$2,232
334	1.7.3.19	Fabricate exhaust line support	0%	Mon 8/5/02	Fri 10/25/02	$1,880
335	1.7.3.20	Target procurement done	0%	Wed 10/30/02	Wed 10/30/02	$0
336	**1.7.4**	**Installation, construction, testin**	**0%**	**Fri 9/28/01**	**Fri 5/2/03**	**$43,510**
337	1.7.4.1	Lujan Change Review Commi	0%	Sat 6/1/02	Fri 6/28/02	$0
338	1.7.4.2	Construction of gas handling s	0%	Fri 9/28/01	Thu 2/21/02	$0
339	1.7.4.3	Tgt construction at Indiana	0%	Tue 10/2/01	Fri 4/26/02	$0
340	1.7.4.4	Liquid nitrogen test at IU	0%	Tue 7/2/02	Sat 8/3/02	$0
341	1.7.4.5	Target testing in Indiana comp	0%	Mon 8/5/02	Mon 8/5/02	$0
342	1.7.4.6	Stand testing at LANSCE	0%	Mon 6/3/02	Fri 8/2/02	$0
343	1.7.4.7	Target delivery to LANL	0%	Mon 9/2/02	Fri 9/27/02	$0
344	1.7.4.8	Target testing at LANSCE	0%	Mon 9/2/02	Mon 12/2/02	$0
345	1.7.4.9	Install exhaust line and manifc	0%	Thu 1/2/03	Mon 3/10/03	$17,859
346	1.7.4.10	Install hydrogen supply systen	0%	Wed 1/1/03	Tue 3/11/03	$4,465
347	1.7.4.11	Install helium supply system	0%	Wed 1/1/03	Tue 3/11/03	$2,232
348	1.7.4.12	Wiring status/alarm signals to	0%	Thu 1/2/03	Wed 3/12/03	$5,718
349	1.7.4.13	Test exhaust line	0%	Mon 4/14/03	Thu 5/1/03	$0
350	1.7.4.14	Testing vacuum system	0%	Mon 2/3/03	Tue 4/1/03	$0
351	1.7.4.15	Target testing complete	0%	Fri 5/2/03	Fri 5/2/03	$0
352	**1.7.4.15**	**Target installation**	**0%**	**Thu 1/30/03**	**Mon 4/14/03**	**$0**
353	1.7.4.15.1	Target installation on beai	0%	Thu 1/30/03	Fri 4/11/03	$0
354	1.7.4.15.2	Target installation comple	0%	Mon 4/14/03	Mon 4/14/03	$0
355	1.7.4.16	Testing of monitors and alarm	0%	Mon 2/17/03	Fri 3/14/03	$0
356	1.7.4.17	Target operational safety revie	0%	Tue 4/15/03	Wed 4/30/03	$13,236
357	**1.7.5**	**Commissioning**	**0%**	**Fri 5/2/03**	**Thu 6/12/03**	**$6,892**
358	1.7.5.1	Commissioning	0%	Fri 5/2/03	Wed 6/11/03	$6,892
359	1.7.5.2	1st cooldown	0%	Tue 5/13/03	Wed 6/11/03	$0
360	1.7.5.3	Target completed	0%	Thu 6/12/03	Thu 6/12/03	$0
361	**1.8**	**Monitors**	**25%**	**Tue 5/2/00**	**Fri 12/27/02**	**$26,600**
362	**1.8.1**	**Conceptual design**	**100%**	**Tue 5/2/00**	**Fri 12/29/00**	**$0**
363	1.8.1.1	Conceptual Design	100%	Tue 5/2/00	Fri 12/29/00	$0
364	**1.8.2**	**Design**	**46%**	**Fri 2/2/01**	**Fri 11/30/01**	**$0**
365	1.8.2.1	Design of front monitor #1	90%	Fri 2/2/01	Fri 6/15/01	$0
366	1.8.2.1.1	Monitor #1 design complete	0%	Mon 6/18/01	Mon 6/18/01	$0
367	1.8.2.2	Evaluation of back monitor pe	75%	Wed 5/2/01	Fri 7/27/01	$0
368	1.8.2.3	Design of back monitor modifi	0%	Wed 8/1/01	Fri 11/30/01	$0
369	1.8.2.4	Design of monitor supports	0%	Wed 8/29/01	Mon 10/29/01	$0
370	**1.8.3**	**Procurement**	**0%**	**Mon 6/18/01**	**Fri 9/27/02**	**$15,600**
371	1.8.3.1	Procure front monitor #1	0%	Mon 6/18/01	Mon 8/27/01	$8,000
372	1.8.3.2	Procure front monitors #2 and	0%	Thu 1/3/02	Tue 9/3/02	$4,600
373	1.8.3.3	Procure back monitor modifica	0%	Mon 12/3/01	Mon 4/1/02	$2,000
374	1.8.3.4	Fabricate monitor supports	0%	Mon 7/1/02	Fri 9/27/02	$1,000
375	1.8.3.5	Monitor #1 delivered	0%	Tue 8/28/01	Tue 8/28/01	$0
376	**1.8.4**	**Installation, construction, testin**	**0%**	**Thu 8/30/01**	**Mon 10/28/02**	**$10,000**
377	1.8.4.1	Bench test front monitor#1	0%	Thu 8/30/01	Tue 10/30/01	$0



Project: Flight Path 12 Construction
Date: Tue 7/10/01

Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone

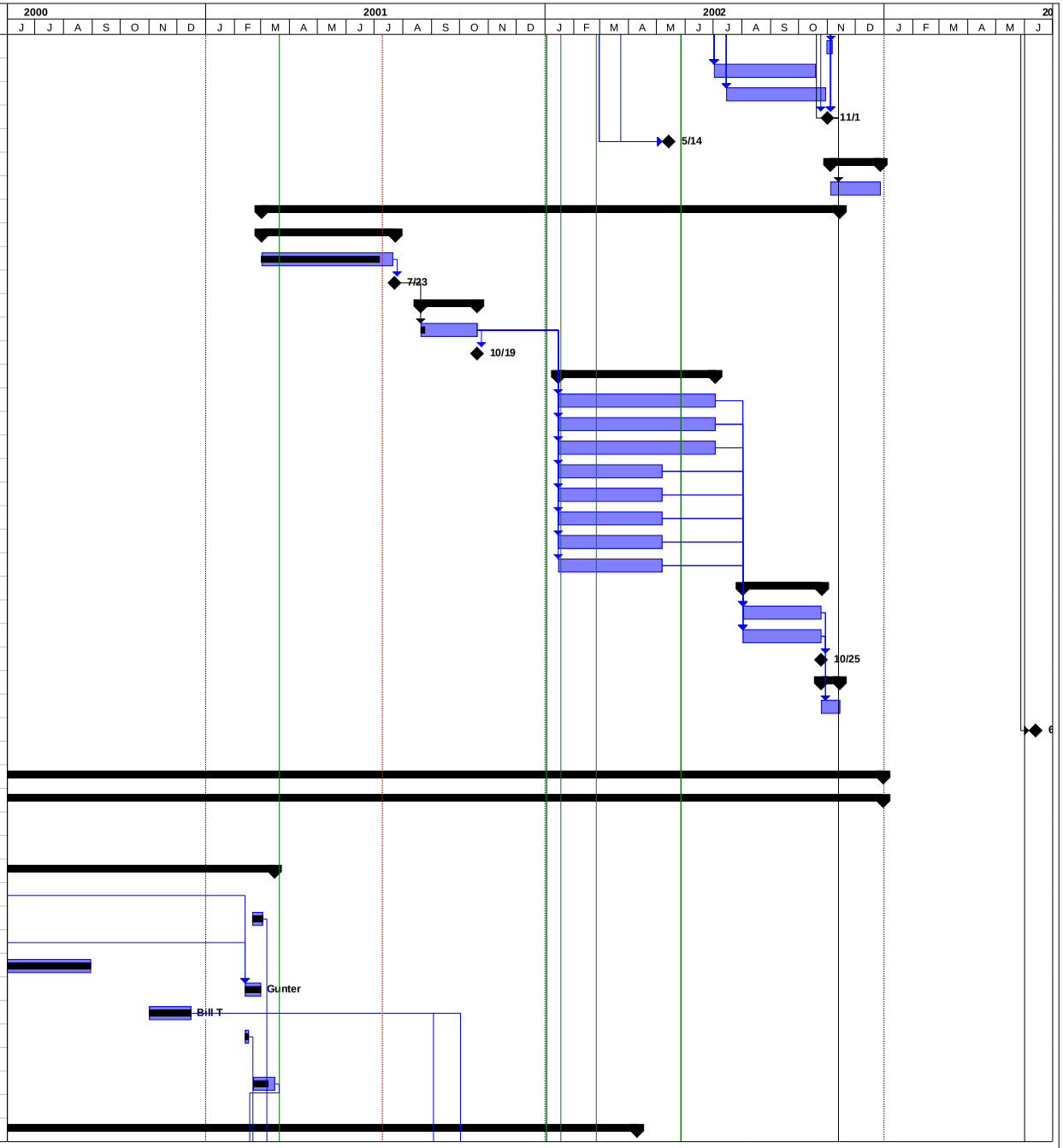
ID	WBS	Task Name	Comple	Early Start	Early Finish	Cost
378	1.8.4.2	Beam test front monitor #1	0%	Fri 11/2/01	Fri 11/30/01	$10,000
379	1.8.4.2.1	Monitor #1 tested	0%	Mon 12/3/01	Mon 12/3/01	$0
380	1.8.4.3	Carry out back monitor modific	0%	Thu 4/4/02	Wed 6/5/02	$0
381	1.8.4.4	Bench test back monitor	0%	Thu 6/6/02	Mon 8/12/02	$0
382	1.8.4.5	Install monitors in cave	0%	Thu 8/15/02	Fri 9/27/02	$0
383	1.8.4.6	Test monitors in cave	0%	Mon 9/30/02	Mon 10/28/02	$0
384	1.8.4.7	Back monitor ready	0%	Tue 8/13/02	Tue 8/13/02	$0
385	**1.8.5**	**Commissioning**	**0%**	**Fri 11/1/02**	**Fri 12/27/02**	**$1,000**
386	1.8.5.1	Commissioning	0%	Fri 11/1/02	Fri 12/27/02	$1,000
387	1.8.5.2	Monitors complete	0%	Fri 12/27/02	Fri 12/27/02	$0
388	**1.9**	**Cave**	**6%**	**Fri 3/2/01**	**Fri 12/27/02**	**$536,931**
389	**1.9.1**	**Conceptual Design**	**22%**	**Fri 3/2/01**	**Mon 10/15/01**	**$24,434**
390	1.9.1.1	MCNPX calculations of ER2 s	0%	Mon 7/30/01	Tue 9/11/01	$8,993
391	1.9.1.1.1	Check maganite concrete shie	0%	Mon 7/16/01	Tue 9/18/01	$0
392	1.9.1.1.2	Check wax box steel ball shiel	0%	Mon 7/16/01	Tue 9/18/01	$0
393	1.9.1.2	Conceptual design of guide tu	13%	Mon 7/30/01	Fri 10/12/01	$3,860
394	1.9.1.3	Conceptual design of cave shi	33%	Mon 7/30/01	Fri 10/12/01	$7,721
395	1.9.1.4	Conceptual design of cave pe	0%	Mon 7/30/01	Thu 9/27/01	$1,930
396	1.9.1.5	Conceptual design of beam du	0%	Thu 8/16/01	Mon 10/15/01	$1,930
397	1.9.1.6	Agree conceptual design of ca	0%	Mon 10/15/01	Mon 10/15/01	$0
398	1.9.1.7	Foot print of experiment agree	75%	Fri 3/2/01	Fri 6/29/01	$0
399	1.9.1.8	Agreement with neigbouring fl	0%	Mon 10/15/01	Mon 10/15/01	$0
400	**1.9.2**	**Design**	**4%**	**Wed 5/30/01**	**Tue 2/5/02**	**$55,975**
401	1.9.2.1	Floor load calculations in ER2	20%	Wed 5/30/01	Thu 8/30/01	$3,860
402	1.9.2.2	Design guide tunnel shielding	0%	Mon 9/17/01	Wed 11/14/01	$11,581
403	1.9.2.3	Design ER2 wall shielding box	0%	Mon 9/17/01	Wed 11/14/01	$965
404	1.9.2.4	Design cave shielding	0%	Mon 10/15/01	Tue 1/15/02	$30,883
405	1.9.2.5	Design cave penetrations	0%	Tue 10/2/01	Fri 11/30/01	$5,791
406	1.9.2.6	Design of beam dump	0%	Tue 10/16/01	Fri 1/11/02	$2,895
407	1.9.2.7	Approval of ER2 shielding des	0%	Wed 1/16/02	Fri 2/1/02	$0
408	1.9.2.8	Cave design complete	0%	Wed 1/16/02	Tue 2/5/02	$0
409	**1.9.3**	**Procurement**	**0%**	**Mon 2/4/02**	**Fri 9/27/02**	**$382,792**
410	1.9.3.1	Prepare procurement of shielc	0%	Mon 2/4/02	Mon 3/4/02	$0
411	1.9.3.2	Procure guide tunnel shielding	0%	Tue 3/5/02	Thu 5/16/02	$112,770
412	1.9.3.3	Procure ER2 wall matching sh	0%	Thu 3/28/02	Tue 5/14/02	$1,253
413	1.9.3.4	Procure cave rad. shielding m	0%	Tue 3/5/02	Tue 7/2/02	$200,480
414	1.9.3.5	Procure steel flux return yoke	0%	Fri 3/29/02	Wed 5/29/02	$13,783
415	1.9.3.6	Procure aluminum rf shield	0%	Tue 4/2/02	Fri 6/28/02	$20,048
416	1.9.3.7	Procure beam dump	0%	Wed 5/29/02	Mon 7/29/02	$18,795
417	1.9.3.8	Procure door	0%	Mon 7/29/02	Fri 9/27/02	$13,783
418	1.9.3.9	Procure steps	0%	Fri 8/2/02	Mon 9/2/02	$1,253
419	1.9.3.10	Procure roof railing	0%	Mon 7/29/02	Fri 9/27/02	$627
420	**1.9.4**	**Installation, construction, testin**	**0%**	**Tue 5/14/02**	**Fri 11/8/02**	**$73,730**
421	1.9.4.1	Install guide tunnel shielding	0%	Wed 5/15/02	Fri 6/28/02	$35,748
422	1.9.4.2	Install cave shielding	0%	Mon 7/1/02	Wed 10/30/02	$35,748
423	1.9.4.3	Install beam dump	0%	Tue 10/1/02	Tue 10/29/02	$2,234
424	1.9.4.4	Install steps	0%	Thu 10/31/02	Fri 11/8/02	$0



Project: Flight Path 12 Construction
Date: Tue 7/10/01

Task | Critical Task | Progress | Milestone | Summary | Rolled Up Task | Rolled Up Critical Task | Rolled Up Milestone | Rolled Up Progress

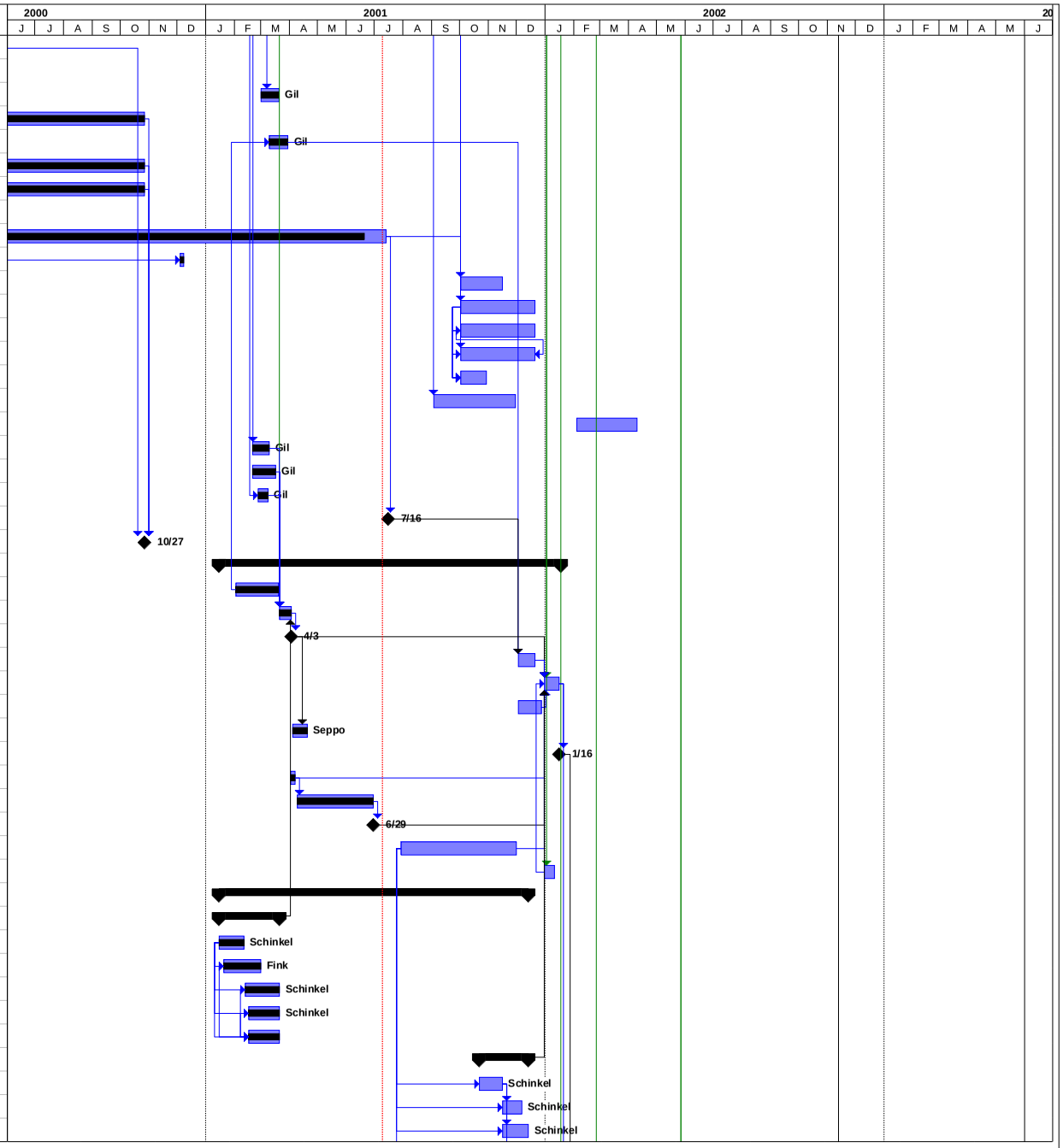
ID	WBS	Task Name	Comple	Early Start	Early Finish	Cost
425	1.9.4.5	Install roof railing	0%	Thu 10/31/02	Tue 11/5/02	$0
426	1.9.4.6	Change Control Review	0%	Tue 7/2/02	Fri 10/18/02	$0
427	1.9.4.7	Shielding review	0%	Mon 7/15/02	Tue 10/29/02	$0
428	1.9.4.8	Cave completed	0%	Fri 11/1/02	Fri 11/1/02	$0
429	1.9.4.9	ER2 shielding installation start	0%	Tue 5/14/02	Tue 5/14/02	$0
430	**1.9.5**	**Commissioning**	**0%**	**Mon 11/4/02**	**Fri 12/27/02**	**$0**
431	1.9.5.1	Commissioning	0%	Mon 11/4/02	Fri 12/27/02	$0
432	**1.10**	**ER2 Utilities**	**28%**	**Fri 3/2/01**	**Wed 11/13/02**	**$72,172**
433	**1.10.1**	**Conceptual Design**	**89%**	**Fri 3/2/01**	**Mon 7/23/01**	**$0**
434	1.10.1.1	Conceptual design of electrica	90%	Fri 3/2/01	Fri 7/20/01	$0
435	1.10.1.2	Conceptual design of powerin	0%	Mon 7/23/01	Mon 7/23/01	$0
436	**1.10.2**	**Design**	**10%**	**Mon 8/20/01**	**Fri 10/19/01**	**$7,434**
437	1.10.2.1	Design of electrical work	10%	Mon 8/20/01	Fri 10/19/01	$7,434
438	1.10.2.2	Powering of experiment desig	0%	Fri 10/19/01	Fri 10/19/01	$0
439	**1.10.3**	**Procurement**	**0%**	**Tue 1/15/02**	**Tue 7/2/02**	**$31,252**
440	1.10.3.1	Procure 480V panel	0%	Tue 1/15/02	Tue 7/2/02	$3,759
441	1.10.3.2	Procure 480V contact	0%	Tue 1/15/02	Tue 7/2/02	$3,759
442	1.10.3.3	Procure chopper outlet	0%	Tue 1/15/02	Tue 7/2/02	$94
443	1.10.3.4	Procure stepdown transformer	0%	Tue 1/15/02	Mon 5/6/02	$2,506
444	1.10.3.5	Procure isolation transformer	0%	Tue 1/15/02	Mon 5/6/02	$7,518
445	1.10.3.6	Procure 208/120V clean pane	0%	Tue 1/15/02	Mon 5/6/02	$6,265
446	1.10.3.7	Procure 208/120V dirty panel	0%	Tue 1/15/02	Mon 5/6/02	$6,265
447	1.10.3.8	Procurement installation work	0%	Tue 1/15/02	Mon 5/6/02	$1,086
448	**1.10.4**	**Installation, construction, testin**	**0%**	**Fri 8/2/02**	**Fri 10/25/02**	**$33,486**
449	1.10.4.1	Wiring transformers and pane	0%	Fri 8/2/02	Thu 10/24/02	$22,324
450	1.10.4.2	Load wiring	0%	Fri 8/2/02	Thu 10/24/02	$11,162
451	1.10.4.3	Experiment has power	0%	Fri 10/25/02	Fri 10/25/02	$0
452	**1.10.5**	**Commissioning**	**0%**	**Fri 10/25/02**	**Wed 11/13/02**	**$0**
453	1.10.5.1	Commissioning of power	0%	Fri 10/25/02	Wed 11/13/02	$0
454	**1.11**	**End of Experiment Construction**	0%	Fri 6/13/03	Mon 6/16/03	$0
455						
456	**2.0**	**BEAM LINE CONSTRUCTION**	**54%**	**Mon 6/29/98**	**Mon 12/30/02**	**$1,979,109**
457	**2.1**	**In-Pile Guide**	**79%**	**Mon 6/29/98**	**Mon 12/30/02**	**$541,974**
458	**2.1.1**	**Conceptual design**	**100%**	**Mon 6/29/98**	**Wed 7/29/98**	**$0**
459	2.1.1.1	Conceptual Design	100%	Mon 6/29/98	Wed 7/29/98	$0
460	**2.1.2**	**Design**	**99%**	**Mon 8/31/98**	**Thu 3/15/01**	**$115,384**
461	2.1.2.0	Thimble design	100%	Mon 8/31/98	Fri 11/27/98	$0
462	2.1.2.1	Design of thimble/beam plug i	100%	Tue 2/20/01	Fri 3/2/01	$0
463	2.1.2.2	Design of guide insert&transp	100%	Mon 7/12/99	Tue 2/29/00	$94,259
464	2.1.2.3	MCNPX heat calculations	100%	Fri 7/2/99	Tue 8/29/00	$15,355
465	2.1.2.4	MCNPX thimble beam plug ca	100%	Mon 2/12/01	Wed 2/28/01	$5,770
466	2.1.2.5	Design of He guide cooling sy	100%	Wed 11/1/00	Fri 12/15/00	$0
467	2.1.2.6	Design of beam plug mods for	100%	Mon 2/12/01	Thu 2/15/01	$0
468	2.1.2.7	Thimble designed	0%	Mon 11/30/98	Mon 11/30/98	$0
469	2.1.2.8	Design of TC measurement in	70%	Wed 2/21/01	Thu 3/15/01	$0
470	2.1.2.9	Guide insert&transporter desi	0%	Wed 3/1/00	Wed 3/1/00	$0
471	**2.1.3**	**Procurement**	**77%**	**Tue 12/1/98**	**Tue 4/9/02**	**$406,644**



Project: Flight Path 12 Construction
Date: Tue 7/10/01

Task | Critical Task | Progress | Milestone | Summary | Rolled Up Task | Rolled Up Critical Task | Rolled Up Milestone | Rolled Up Progress

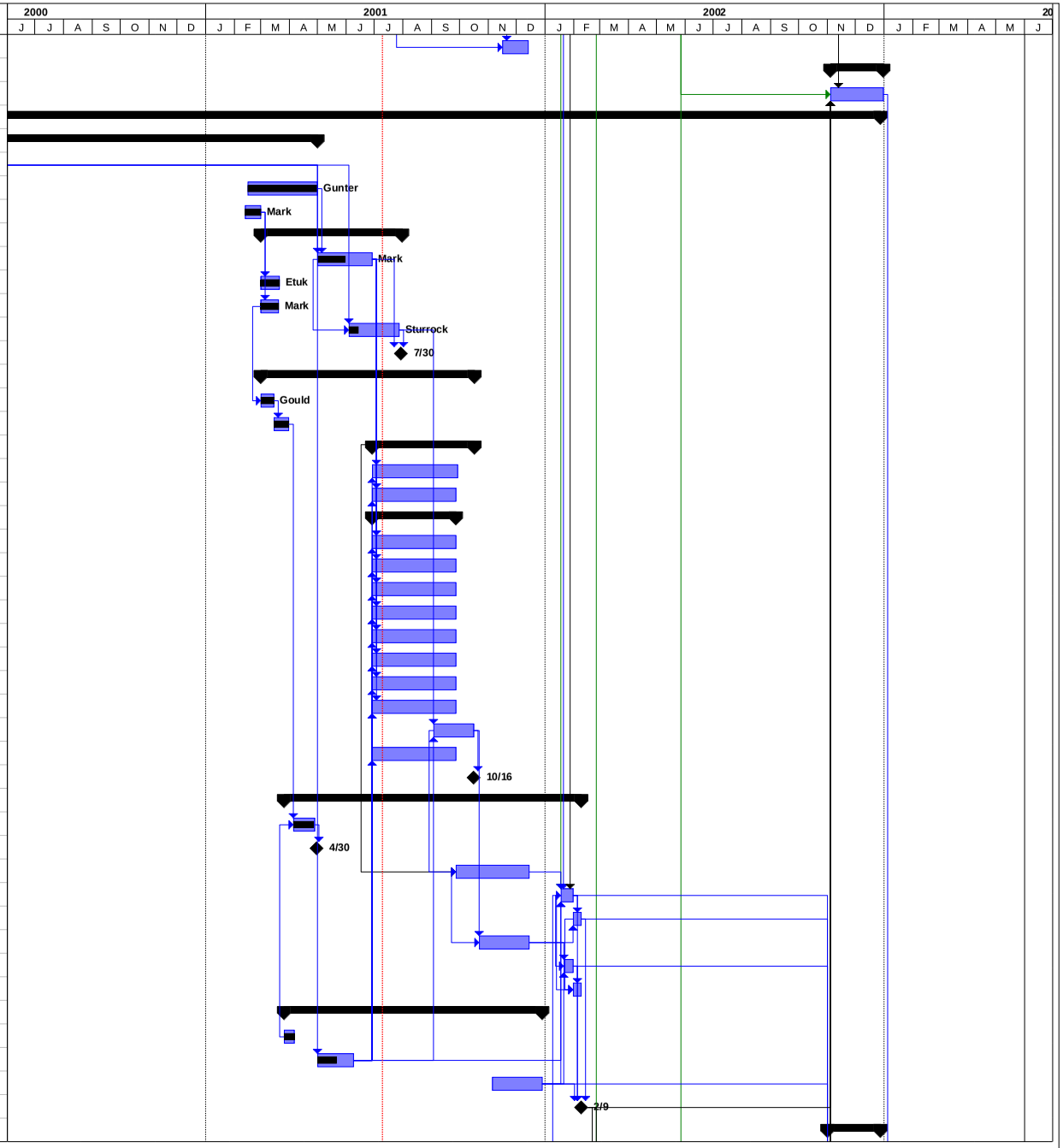
ID	WBS	Task Name	Comple	Early Start	Early Finish	Cost
472	2.1.3.1	Fabrication of thimble	100%	Tue 12/1/98	Fri 11/12/99	$111,552
473	2.1.3.2	Fabrication of beam plugs	100%	Mon 3/1/99	Thu 4/29/99	$9,296
474	2.1.3.3	Fab. of beam plug/thimble insl	100%	Thu 3/1/01	Tue 3/20/01	$0
475	2.1.3.4	Fabrication of guide insert	100%	Mon 4/3/00	Thu 10/26/00	$47,469
476	2.1.3.4.1.	Fix the guide insert	100%	Sat 3/10/01	Thu 3/29/01	$0
477	2.1.3.5	Fabrication of adjustable mou	100%	Mon 4/3/00	Thu 10/26/00	$16,289
478	2.1.3.6	Fabrication of transporter	100%	Mon 4/3/00	Thu 10/26/00	$60,119
479	2.1.3.7	Prepare guide specifications	100%	Thu 2/3/00	Tue 2/29/00	$0
480	2.1.3.8	In-pile guide procurement	95%	Fri 3/3/00	Fri 7/13/01	$138,112
481	2.1.3.9	Inspection of in-pile guide fabr	100%	Mon 12/4/00	Thu 12/7/00	$0
482	2.1.3.10	Procure alignment mirrors wit	0%	Tue 10/2/01	Thu 11/15/01	$3,759
483	2.1.3.11	Fabrication of gas manifold	0%	Tue 10/2/01	Thu 12/20/01	$2,506
484	2.1.3.12	Procurement of vacuum pump	0%	Tue 10/2/01	Thu 12/20/01	$5,012
485	2.1.3.13	Procure vacuum instrumentati	0%	Tue 10/2/01	Thu 12/20/01	$2,506
486	2.1.3.14	Procure vacuum feedthroughs	0%	Tue 10/2/01	Mon 10/29/01	$2,506
487	2.1.3.15	Fabrication of window and gas	0%	Mon 9/3/01	Thu 11/29/01	$3,759
488	2.1.3.16	Procure pure Helium gas	0%	Mon 2/4/02	Tue 4/9/02	$3,759
489	2.1.3.17	Beam plug modifications	100%	Tue 2/20/01	Fri 3/9/01	$0
490	2.1.3.18	Vacuum feedthroughs for TC	100%	Tue 2/20/01	Fri 3/16/01	$0
491	2.1.3.19	Procure sst tube for TC wires	100%	Mon 2/26/01	Thu 3/8/01	$0
492	2.1.3.20	In-pile guide received	0%	Mon 7/16/01	Mon 7/16/01	$0
493	2.1.3.21	Thimble,insert, transported fat	0%	Fri 10/27/00	Fri 10/27/00	$0
494	**2.1.4**	**Insatallation, construction and t**	**49%**	**Mon 1/15/01**	**Thu 1/17/02**	**$13,681**
495	2.1.4.1	Dry run w. thimble, insert&trar	100%	Fri 2/2/01	Mon 3/19/01	$0
496	2.1.4.2	Thimble Installation	100%	Wed 3/21/01	Mon 4/2/01	$1,929
497	2.1.4.2.1	Thimble installed	0%	Tue 4/3/01	Tue 4/3/01	$0
498	2.1.4.3	Mounting in-pile guide into ins	0%	Mon 12/3/01	Thu 12/20/01	$1,929
499	2.1.4.4	Installation of insert and guide	0%	Mon 12/31/01	Tue 1/15/02	$8,930
500	2.1.4.5	Mounting of alignment mirrors	0%	Mon 12/3/01	Thu 12/27/01	$893
501	2.1.4.6	Thimble installation summary	100%	Wed 4/4/01	Thu 4/19/01	$0
502	2.1.4.7	In-pile guide installed	0%	Wed 1/16/02	Thu 1/17/02	$0
503	2.1.4.8	Check transporter travel into E	100%	Mon 4/2/01	Fri 4/6/01	$0
504	2.1.4.9	Transporter modifications	100%	Mon 4/9/01	Fri 6/29/01	$0
505	2.1.4.9.1	Transporter modifications finis	0%	Fri 6/29/01	Fri 6/29/01	$0
506	2.1.4.10	Prepare in-pile guide installati	0%	Mon 7/30/01	Fri 11/30/01	$0
507	2.1.4.11	Remove fp 11 shielding	0%	Mon 12/31/01	Thu 1/10/02	$0
508	**2.1.4.6**	**Change Control Review**	**55%**	**Mon 1/15/01**	**Thu 12/13/01**	**$0**
509	**2.1.4.6.1**	**Change Control Review**	**100%**	**Mon 1/15/01**	**Tue 3/20/01**	**$0**
510	2.1.4.6.1.1	Evaluation of hazards	100%	Mon 1/15/01	Sat 2/10/01	$0
511	2.1.4.6.1.2	Prepare USQD	100%	Sat 1/20/01	Wed 2/28/01	$0
512	2.1.4.7.1.3	Prepare HCP	100%	Mon 2/12/01	Tue 3/20/01	$0
513	2.1.4.7.1.4	Prepare ALARA	100%	Fri 2/16/01	Tue 3/20/01	$0
514	2.1.4.7.1.5	Prepare check list for	100%	Fri 2/16/01	Tue 3/20/01	$0
515	**2.1.4.6.2**	**Change Control Review**	**0%**	**Mon 10/22/01**	**Thu 12/13/01**	**$0**
516	2.1.4.6.2.1	Evaluation of hazards	0%	Mon 10/22/01	Thu 11/15/01	$0
517	2.1.4.7.2.2	Prepare HCP	0%	Fri 11/16/01	Thu 12/6/01	$0
518	2.1.4.7.2.3	Prepare ALARA	0%	Fri 11/16/01	Thu 12/13/01	$0



Project: Flight Path 12 Construction
Date: Tue 7/10/01

Task | Critical Task | Progress | Milestone | Summary | Rolled Up Task | Rolled Up Critical Task | Rolled Up Milestone | Rolled Up Progress

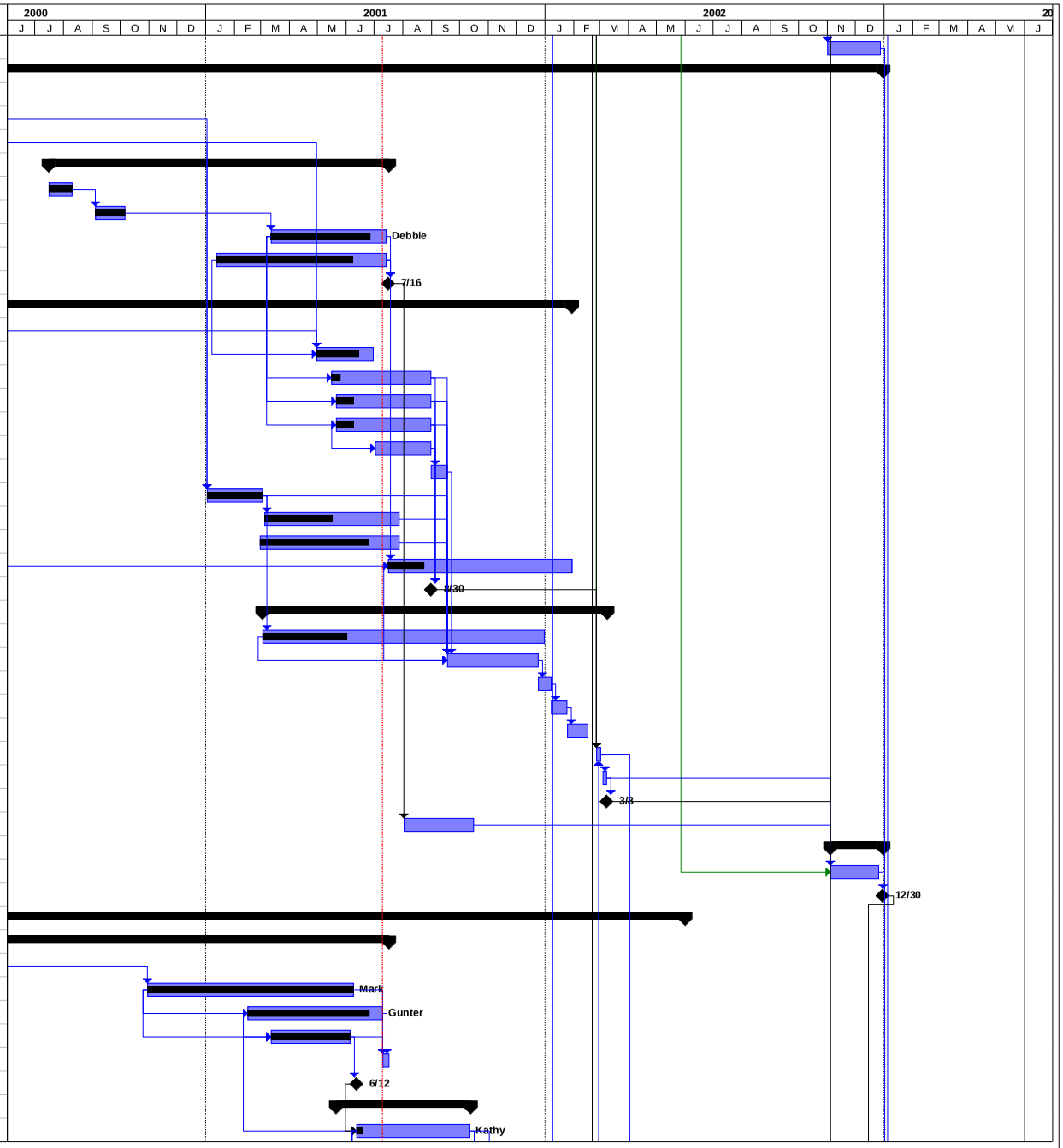
ID	WBS	Task Name	Comple	Early Start	Early Finish	Cost
519	2.1.4.7.2.4	Prepare check list	0%	Fri 11/16/01	Thu 12/13/01	$0
520	**2.1.5**	**Commissioning**	**0%**	**Mon 11/4/02**	**Mon 12/30/02**	**$6,265**
521	2.1.5.1	Commissioning of in-pile guide	0%	Mon 11/4/02	Mon 12/30/02	$6,265
522	**2.2**	**Shutter**	**55%**	**Tue 1/4/00**	**Fri 12/27/02**	**$148,145**
523	**2.2.1**	**Conceptual design**	**100%**	**Tue 1/4/00**	**Mon 4/30/01**	**$7,601**
524	2.2.1.1	Conceptual design of shutter	100%	Tue 1/4/00	Wed 1/5/00	$2,356
525	2.2.1.2	MCNPX calculations for shutte	100%	Thu 2/15/01	Mon 4/30/01	$2,885
526	2.2.1.3	Conceptual design of ER1 floc	100%	Mon 2/12/01	Wed 2/28/01	$2,360
527	**2.2.2**	**Engineering design**	**51%**	**Thu 3/1/01**	**Mon 7/30/01**	**$13,583**
528	2.2.2.1	Shutter engineering design	50%	Tue 5/1/01	Thu 6/28/01	$7,771
529	2.2.2.2	Floor structural engineering	100%	Thu 3/1/01	Tue 3/20/01	$2,360
530	2.2.2.3	Design of floor modifications	100%	Thu 3/1/01	Mon 3/19/01	$2,140
531	2.2.2.4	Design of shutter control elect	20%	Mon 6/4/01	Fri 7/27/01	$1,312
532	2.2.2.5	Shutter design complete	0%	Mon 7/30/01	Mon 7/30/01	$0
533	**2.2.3**	**Procurement**	**22%**	**Thu 3/1/01**	**Tue 10/16/01**	**$93,175**
534	2.2.3.1	Prepare floor mods procur. pa	100%	Thu 3/1/01	Wed 3/14/01	$2,607
535	2.2.3.2	Procure ER1 floor modificatior	100%	Thu 3/15/01	Fri 3/30/01	$46,480
536	**2.2.3.3**	**Shutter procurement**	**0%**	**Fri 6/29/01**	**Tue 10/16/01**	**$44,088**
537	2.2.3.3.1	Steel	0%	Fri 6/29/01	Fri 9/28/01	$3,984
538	2.2.3.3.2	Hardware	0%	Fri 6/29/01	Wed 9/26/01	$2,656
539	**2.2.3.3.3**	**Fabrication**	**0%**	**Fri 6/29/01**	**Wed 9/26/01**	**$21,512**
540	2.2.3.3.3.1	Sides plates	0%	Fri 6/29/01	Wed 9/26/01	$6,640
541	2.2.3.3.3.2	Top/bottom	0%	Fri 6/29/01	Wed 9/26/01	$3,320
542	2.2.3.3.3.3	Shutter body	0%	Fri 6/29/01	Wed 9/26/01	$6,640
543	2.2.3.3.3.4	Shutter body carrier	0%	Fri 6/29/01	Wed 9/26/01	$1,594
544	2.2.3.3.3.5	Guiding trail system	0%	Fri 6/29/01	Wed 9/26/01	$664
545	2.2.3.3.3.6	Hydraulic basis	0%	Fri 6/29/01	Wed 9/26/01	$1,326
546	2.2.3.3.3.7	Stop rest	0%	Fri 6/29/01	Wed 9/26/01	$1,328
547	2.2.3.3.4	Hydraulic system	0%	Fri 6/29/01	Wed 9/26/01	$6,640
548	2.2.3.4	Procure control electronic	0%	Mon 9/3/01	Mon 10/15/01	$9,296
549	2.2.3.5	Fabrication of thimble/shu	0%	Fri 6/29/01	Wed 9/26/01	$0
550	2.2.3.6	Shutter fabrication comple	0%	Tue 10/16/01	Tue 10/16/01	$0
551	**2.2.4**	**Installation, construction, and te**	**22%**	**Mon 3/26/01**	**Sat 2/9/02**	**$30,027**
552	2.2.4.1	Carry out floor mods and shut	90%	Thu 4/5/01	Fri 4/27/01	$4,080
553	2.2.4.1.1	ER1 floor mods complete	0%	Mon 4/30/01	Mon 4/30/01	$0
554	2.2.4.2	Shutter test assembly	0%	Thu 9/27/01	Fri 12/14/01	$2,040
555	2.2.4.3	Shutter installation	0%	Fri 1/18/02	Wed 1/30/02	$11,651
556	2.2.4.4	Shutter in situe testing	0%	Thu 1/31/02	Fri 2/8/02	$3,320
557	2.2.4.5	Bench testing of control electr	0%	Mon 10/22/01	Fri 12/14/01	$2,234
558	2.2.4.6	Installation of control electroni	0%	Mon 1/21/02	Wed 1/30/02	$4,468
559	2.2.4.7	Testing of control electronics v	0%	Thu 1/31/02	Fri 2/8/02	$2,234
560	**2.2.4.7**	**Reviews**	**30%**	**Mon 3/26/01**	**Fri 12/28/01**	**$0**
561	2.2.4.7.1	Change Control Review fo	100%	Mon 3/26/01	Thu 4/5/01	$0
562	2.2.4.7.2	Shutter conceptual design	50%	Tue 5/1/01	Fri 6/8/01	$0
563	2.2.4.7.3	Change Control Review fo	0%	Mon 11/5/01	Fri 12/28/01	$0
564	2.2.4.8	Shutter complete	0%	Sat 2/9/02	Sat 2/9/02	$0
565	**2.2.5**	**Commissioning**	**0%**	**Fri 11/1/02**	**Fri 12/27/02**	**$3,759**



Project: Flight Path 12 Construction
Date: Tue 7/10/01

Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone

ID	WBS	Task Name	Comple	Early Start	Early Finish	Cost
566	2.2.5.1	Shutter commissioning	0%	Fri 11/1/02	Fri 12/27/02	$3,759
567	**2.3**	**Chopper**	**52%**	**Thu 9/2/99**	**Mon 12/30/02**	**$120,408**
568	**2.3.1**	**Conceptual design**	**100%**	**Thu 9/2/99**	**Mon 2/28/00**	**$3,016**
569	2.3.1.1	Conceptual chopper design	100%	Thu 9/2/99	Mon 2/7/00	$3,016
570	2.3.1.2	Conceptual design of control e	100%	Mon 1/3/00	Mon 2/28/00	$0
571	**2.3.2**	**Design**	**85%**	**Sun 7/16/00**	**Mon 7/16/01**	**$61,340**
572	2.3.2.1	1st engineering design	100%	Sun 7/16/00	Wed 8/9/00	$16,284
573	2.3.2.2	Evaluation of design	100%	Mon 9/4/00	Thu 10/5/00	$29,778
574	2.3.2.3	Final engineering design	85%	Mon 3/12/01	Fri 7/13/01	$15,278
575	2.3.2.4	Design of control electronics	80%	Fri 1/12/01	Fri 7/13/01	$0
576	2.3.2.5	Chopper design complete	0%	Mon 7/16/01	Mon 7/16/01	$0
577	**2.3.3**	**Procurement**	**46%**	**Mon 12/13/99**	**Tue 1/29/02**	**$48,898**
578	2.3.3.1	Two rotor motors and control e	100%	Mon 12/13/99	Tue 5/2/00	$15,256
579	2.3.3.2	Position monitoring electronics	75%	Mon 4/30/01	Fri 6/29/01	$0
580	2.3.3.3	Fabrication of chopper case	10%	Wed 5/16/01	Thu 8/30/01	$6,000
581	2.3.3.4	Fabrication of support structur	20%	Mon 5/21/01	Thu 8/30/01	$12,530
582	2.3.3.5	Fabrication of rotors	20%	Mon 5/21/01	Thu 8/30/01	$5,012
583	2.3.3.5.1	Electrostatic painting of rotors	0%	Mon 7/2/01	Thu 8/30/01	$1,253
584	2.3.3.6	Balancing rotors	0%	Fri 8/31/01	Mon 9/17/01	$989
585	2.3.3.7	Procure software	100%	Tue 1/2/01	Fri 3/2/01	$1,083
586	2.3.3.8	Motor hardware accessories	50%	Mon 3/5/01	Fri 7/27/01	$2,895
587	2.3.3.9	Procure electronics	77%	Wed 2/28/01	Fri 7/27/01	$3,062
588	2.3.3.10	Supplies	20%	Mon 7/16/01	Tue 1/29/02	$818
589	2.3.3.11	Chopper fabrication complete	0%	Thu 8/30/01	Thu 8/30/01	$0
590	**2.3.4**	**Installation, construction, and te**	**17%**	**Sat 3/3/01**	**Fri 3/8/02**	**$3,395**
591	2.3.4.1	Development of control softwa	30%	Sat 3/3/01	Sun 12/30/01	$0
592	2.3.4.2	Assembly and testing of chopp	0%	Mon 9/17/01	Mon 12/24/01	$2,002
593	2.3.4.3	Shipping to Los Alamos	0%	Mon 12/24/01	Mon 1/7/02	$500
594	2.3.4.4	Assembly at LANSCE	0%	Mon 1/7/02	Thu 1/24/02	$0
595	2.3.4.5	Testing at LANSCE	0%	Fri 1/25/02	Fri 2/15/02	$0
596	2.3.4.6	Installation in flight path	0%	Mon 2/25/02	Fri 3/1/02	$893
597	2.3.4.7	Testing in flight path	0%	Mon 3/4/02	Thu 3/7/02	$0
598	2.3.4.8	Chopper installed	0%	Fri 3/8/02	Fri 3/8/02	$0
599	2.3.4.9	Change Control Review	0%	Thu 8/2/01	Mon 10/15/01	$0
600	**2.3.5**	**Commissioning**	**0%**	**Mon 11/4/02**	**Mon 12/30/02**	**$3,759**
601	2.3.5.1	Chopper commissioning	0%	Mon 11/4/02	Wed 12/25/02	$3,759
602	2.3.5.2	Chopper complete	0%	Mon 12/30/02	Mon 12/30/02	$0
603	**2.4**	**Integrated Shielding**	**37%**	**Thu 10/29/98**	**Fri 5/31/02**	**$465,946**
604	**2.4.1**	**Conceptual design**	**53%**	**Thu 10/29/98**	**Mon 7/16/01**	**$103,532**
605	2.4.1.1	ARES conceptual design	0%	Thu 10/29/98	Fri 10/29/99	$66,400
606	2.4.1.2	New concept of integrated shi	100%	Mon 10/30/00	Fri 6/8/01	$7,034
607	2.4.1.3	MCNPX calculations	90%	Thu 2/15/01	Mon 7/9/01	$25,798
608	2.4.1.4	Define integrated shielding	100%	Mon 3/12/01	Mon 6/4/01	$0
609	2.4.1.5	Validate integrated shielding	0%	Tue 7/10/01	Mon 7/16/01	$4,300
610	2.4.1.6	Conceptual design of int'ed sh	0%	Tue 6/12/01	Wed 6/13/01	$0
611	**2.4.2**	**Design**	**8%**	**Mon 5/21/01**	**Fri 10/12/01**	**$51,149**
612	2.4.2.1	Design of integrated shielding	5%	Tue 6/12/01	Thu 10/11/01	$45,359



Project: Flight Path 12 Construction
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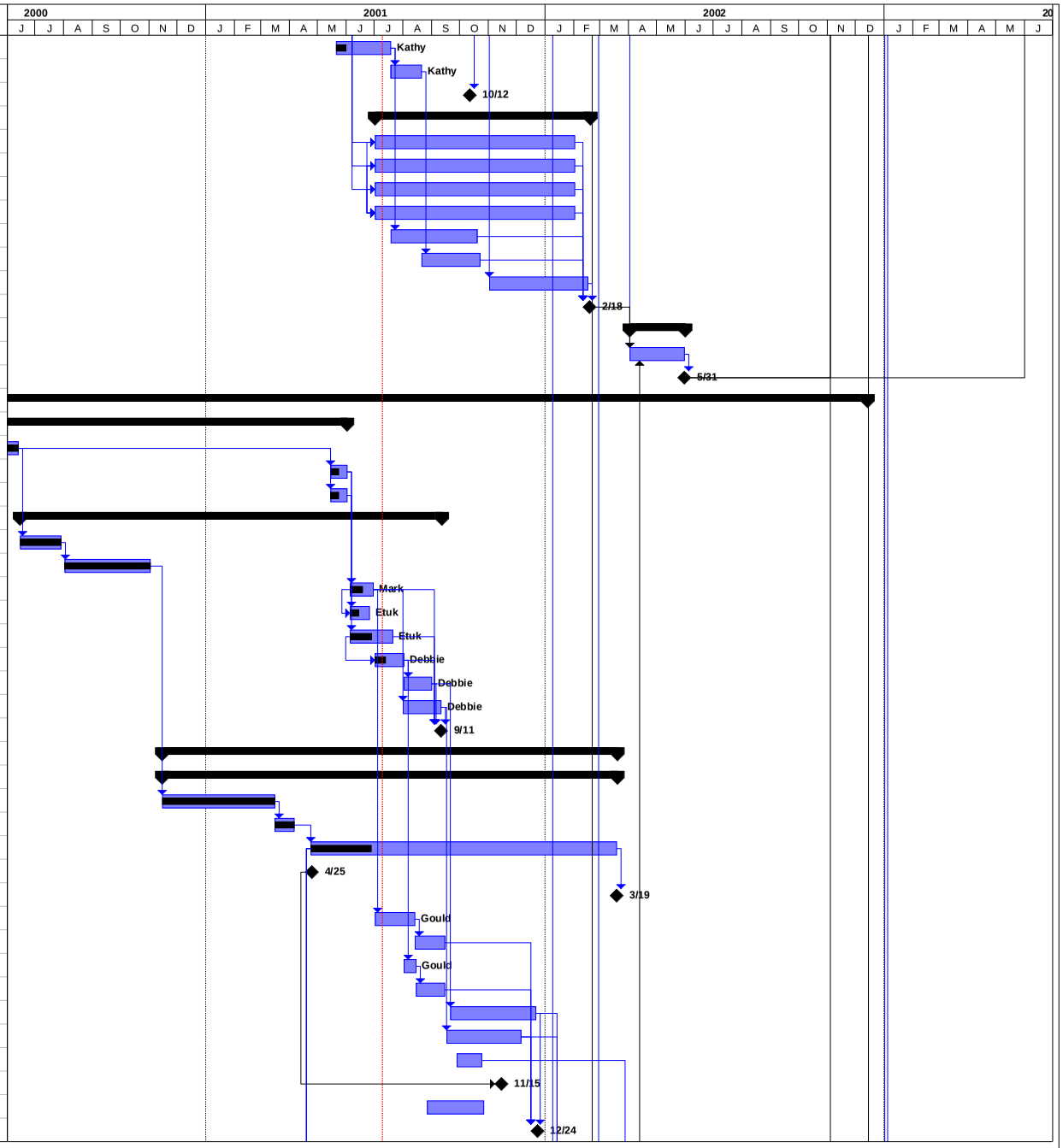
Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone

ID	WBS	Task Name	Comple	Early Start	Early Finish	Cost
613	2.4.2.2	Design of bulkshield box	20%	Mon 5/21/01	Wed 7/18/01	$2,895
614	2.4.2.3	Design of ER1/ER2 wall shiel	0%	Thu 7/19/01	Mon 8/20/01	$2,895
615	2.4.2.4	Int'ed shielding design comple	0%	Fri 10/12/01	Fri 10/12/01	$0
616	**2.4.3**	**Procurement**	**0%**	**Mon 7/2/01**	**Mon 2/18/02**	**$260,436**
617	2.4.3.1	Procurement of steel	0%	Mon 7/2/01	Fri 2/1/02	$200,480
618	2.4.3.2	Procure regular poly	0%	Mon 7/2/01	Fri 2/1/02	$25,060
619	2.4.3.3	Procure borated poly	0%	Mon 7/2/01	Fri 2/1/02	$17,542
620	2.4.3.4	Support procurement process	0%	Mon 7/2/01	Fri 2/1/02	$6,703
621	2.4.3.5	Procure bulkshield shield box	0%	Thu 7/19/01	Fri 10/19/01	$2,506
622	2.4.3.6	Procure ER1/ER2 wall shield l	0%	Tue 8/21/01	Mon 10/22/01	$1,880
623	2.4.3.7	Procure cover for poly	0%	Fri 11/2/01	Fri 2/15/02	$6,265
624	2.4.3.8	Shielding procurement comple	0%	Mon 2/18/02	Mon 2/18/02	$0
625	**2.4.4**	**Installation, construction, and te**	**0%**	**Tue 4/2/02**	**Fri 5/31/02**	**$50,829**
626	2.4.4.1	Install integrated shielding	0%	Tue 4/2/02	Thu 5/30/02	$50,829
627	2.4.4.2	Integrated shielding complete	0%	Fri 5/31/02	Fri 5/31/02	$0
628	**2.5**	**Neutron guide**	**46%**	**Tue 5/2/00**	**Fri 12/13/02**	**$655,838**
629	**2.5.1**	**Conceptual design**	**76%**	**Tue 5/2/00**	**Fri 6/1/01**	**$12,394**
630	2.5.1.1	Guide conceptual design	100%	Tue 5/2/00	Mon 6/12/00	$9,288
631	2.5.1.2	Concept of floor mods in ER2	50%	Tue 5/15/01	Fri 6/1/01	$1,553
632	2.5.1.3	Concept of wall penetration	50%	Tue 5/15/01	Fri 6/1/01	$1,553
633	**2.5.2**	**Design**	**59%**	**Thu 6/15/00**	**Tue 9/11/01**	**$47,014**
634	2.5.2.1	Guide design	100%	Thu 6/15/00	Fri 7/28/00	$24,521
635	2.5.2.2	Guide specifications	100%	Wed 8/2/00	Wed 11/1/00	$0
636	2.5.2.3	Design of floor modifications ir	50%	Tue 6/5/01	Fri 6/29/01	$1,543
637	2.5.2.4	Floor load calculations	50%	Tue 6/5/01	Mon 6/25/01	$4,689
638	2.5.2.5	Wall load calculations	50%	Tue 6/5/01	Fri 7/20/01	$4,689
639	2.5.2.6	Design of wall penetration	40%	Mon 7/2/01	Wed 8/1/01	$1,929
640	2.5.2.7	Design of guide support on the	0%	Thu 8/2/01	Fri 8/31/01	$3,857
641	2.5.2.8	Design of guide supports on fl	0%	Wed 8/1/01	Mon 9/10/01	$5,786
642	2.5.2.9	Floor and wall penetrations de	0%	Tue 9/11/01	Tue 9/11/01	$0
643	**2.5.3**	**Procurement**	**23%**	**Wed 11/15/00**	**Tue 3/19/02**	**$585,260**
644	**2.5.3.1**	**Procure guide**	**44%**	**Wed 11/15/00**	**Tue 3/19/02**	**$511,280**
645	2.5.3.1.1	RFQ process	100%	Wed 11/15/00	Thu 3/15/01	$0
646	2.5.3.1.2	Compare RFQs	100%	Fri 3/16/01	Thu 4/5/01	$0
647	2.5.3.1.3	Guide procurement	20%	Tue 4/24/01	Mon 3/18/02	$511,280
648	2.5.3.1.4	Guide ordered	0%	Wed 4/25/01	Wed 4/25/01	$0
649	2.5.3.1.5	Guide delivered	0%	Tue 3/19/02	Tue 3/19/02	$0
650	2.5.3.2	Prepare ER2 floor mods procu	0%	Mon 7/2/01	Mon 8/13/01	$1,908
651	2.5.3.3	Procure ER2 floor modificatior	0%	Tue 8/14/01	Fri 9/14/01	$33,200
652	2.5.3.4	Prepare wall pentration procur	0%	Thu 8/2/01	Tue 8/14/01	$1,908
653	2.5.3.5	Procure wall penetration	0%	Wed 8/15/01	Fri 9/14/01	$18,795
654	2.5.3.6	Procure guide supports on wa	0%	Fri 9/21/01	Fri 12/21/01	$6,265
655	2.5.3.7	Procure guide supports in ER2	0%	Mon 9/17/01	Wed 12/5/01	$5,639
656	2.5.3.8	Procure guide vacuum system	0%	Fri 9/28/01	Wed 10/24/01	$6,265
657	2.5.3.9	Guide fabrication inspection	0%	Thu 11/15/01	Tue 1/15/02	$0
658	2.5.3.10	Change Control Review	0%	Mon 8/27/01	Fri 10/26/01	$0
659	2.5.3.11	Guide support and pentrations	0%	Mon 12/24/01	Mon 12/24/01	$0



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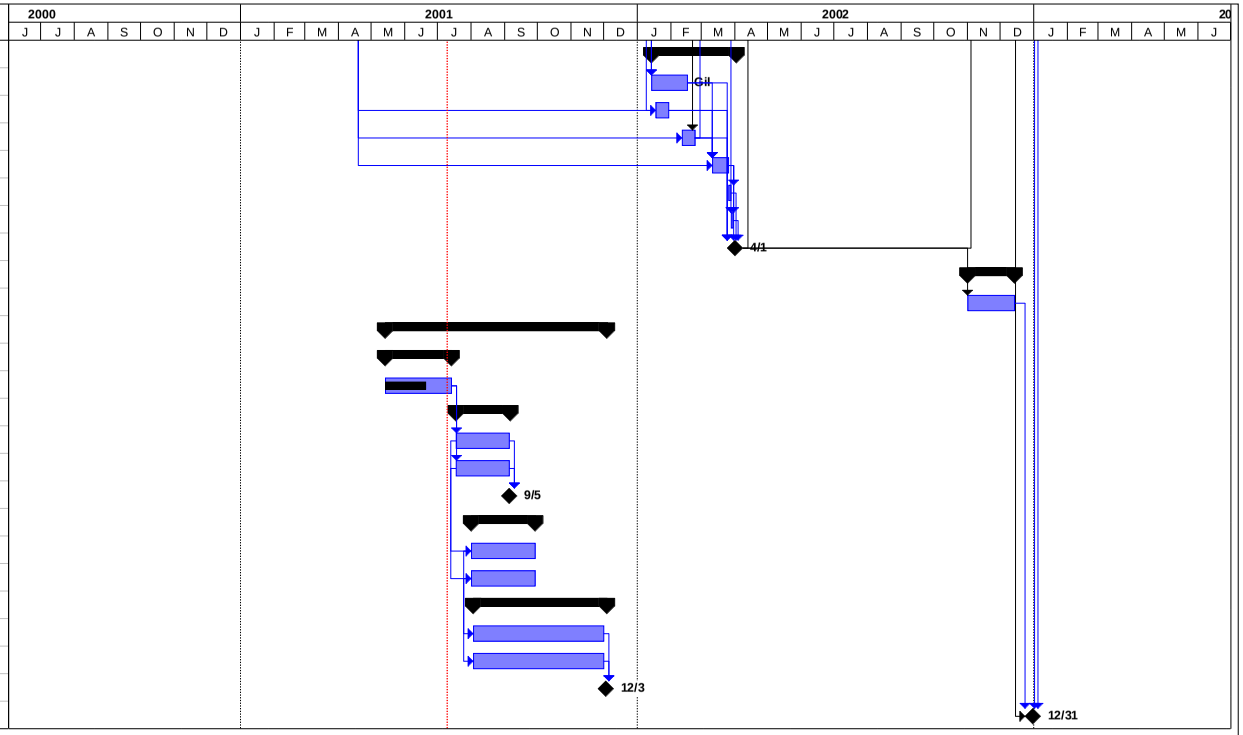
Task		Progress		Summary		Rolled Up Critical Task		Rolled Up Progress	
Critical Task		Milestone	◆	Rolled Up Task		Rolled Up Milestone	◇		

ID	WBS	Task Name	Comple	Early Start	Early Finish	Cost
660	**2.5.4**	**Installation, construction, testin**	**0%**	**Mon 1/14/02**	**Mon 4/1/02**	**$11,170**
661	2.5.4.1	Install guide mounts on wall ar	0%	Mon 1/14/02	Fri 2/15/02	$4,468
662	2.5.4.2	Shutter guide installation	0%	Fri 1/18/02	Tue 1/29/02	$2,542
663	2.5.4.3	Chopper guide installation	0%	Mon 2/11/02	Fri 2/22/02	$1,618
664	2.5.4.4	ER2 guide installation	0%	Mon 3/11/02	Mon 3/25/02	$2,542
665	2.5.4.5	Validate guide alignment	0%	Tue 3/26/02	Wed 3/27/02	$0
666	2.5.4.6	Check guide vacuum system	0%	Thu 3/28/02	Fri 3/29/02	$0
667	2.5.4.7	Guide installation completed	0%	Mon 4/1/02	Mon 4/1/02	$0
668	**2.5.5**	**Commissioning**	**0%**	**Fri 11/1/02**	**Fri 12/13/02**	**$0**
669	2.5.5.1	Guide commissioning	0%	Fri 11/1/02	Fri 12/13/02	$0
670	**2.6**	**ER1 Utilities**	**13%**	**Mon 5/14/01**	**Mon 12/3/01**	**$46,798**
671	**2.6.1**	**Conceptual design**	**60%**	**Mon 5/14/01**	**Fri 7/13/01**	**$2,345**
672	2.6.1.1	Conceptual design of utilities i	60%	Mon 5/14/01	Fri 7/13/01	$2,345
673	**2.6.2**	**Design**	**0%**	**Wed 7/18/01**	**Wed 9/5/01**	**$3,860**
674	2.6.2.1	Design of electrical changes ir	0%	Wed 7/18/01	Tue 9/4/01	$1,930
675	2.6.2.2	Design of other utility changes	0%	Wed 7/18/01	Tue 9/4/01	$1,930
676	2.6.2.3	Plans for ER1 modifications cc	0%	Wed 9/5/01	Wed 9/5/01	$0
677	**2.6.3**	**Procurement**	**0%**	**Wed 8/1/01**	**Fri 9/28/01**	**$13,783**
678	2.6.3.1	Procure material for electrical	0%	Wed 8/1/01	Fri 9/28/01	$8,771
679	2.6.3.2	Procure material for other cha	0%	Wed 8/1/01	Fri 9/28/01	$5,012
680	**2.6.4**	**Installation, construction, testin**	**0%**	**Fri 8/3/01**	**Mon 12/3/01**	**$26,810**
681	2.6.4.1	Carry out electrical work	0%	Fri 8/3/01	Fri 11/30/01	$13,405
682	2.6.4.2	Carry out other modifications	0%	Fri 8/3/01	Fri 11/30/01	$13,405
683	2.6.4.3	ER1 modifications complete	0%	Mon 12/3/01	Mon 12/3/01	$0
684	**2.7**	**End of Beamline Construction**	0%	Tue 12/31/02	Tue 12/31/02	$0



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Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone