

	Activity Name	Duration (Work Days)	Start Date	Finish Date	Predecessors	% Complete	Free Float	Resources Assigned	Comments	2007							
										J	F	M	A	M	J	J	
1	Bladder tests	56.00	1/15/07	4/2/07		8%											
2	Develop fill procedure for bladder. Document results of bladder testing (SS and Teflon) to date.	5.00	1/15/07	1/19/07		75%	0.00	Dudek	Documentation remains to be done.								
3	Determine if "one size fits all". Develop procurement drawings for bladder.	10.00	1/22/07	2/2/07		0%	0.00	Williamson									
4	Set up test equipment to determine CTE and stiffness and to perform cyclic testing. Procure bladders for testing.	5.00	2/5/07	2/9/07	2, 3	0%	0.00	Gettelfinger	May conflict with COF testing								
5	Review structural analyses to determine bladder performance requirements. Establish bladder test parameters, e.g. contact pressure.	5.00	1/22/07	1/26/07		0%	10.00	Fan									
6	Perform tests to determine bladder properties and qualify the design for the given load conditions	5.00	2/12/07	2/16/07	4, 5	0%	5.00	Gettelfinger									
7	Procure/fab prototype bladder for C-C installation	10.00	2/5/07	2/16/07	3	0%	0.00	Dudek	Installation to be prototyped by Viola								
8	Conduct FDR of bladder design	1.00	2/26/07	2/26/07	6, 91	0%	0.00	Williamson									
9	Resolve FDR issues, release procurement drawings for fabrication	5.00	2/27/07	3/5/07	8	0%	0.00	Williamson									
10	Procure bladders for first FPA (2 ea)	20.00	3/6/07	4/2/07	9	0%	0.00	Dudek									
11	Bladders available for FPA	0.00	4/2/07	4/2/07	10	0%	34.00										
12																	
13	Shims	99.00	1/2/07	5/18/07		12%											
14	Coefficient of friction (COF) tests	54.00	1/2/07	3/16/07		7%											
											J	F	M	A	M	J	J

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										J	F	M	A	M	J	J
15	Order candidate materials for screening tests. Perform screening tests. Pick shim surfaces.	19.00	1/2/07	1/26/07		50%	0.00	Gettelfinger								
16	Prepare standard shims for additional testing.	5.00	1/29/07	2/2/07	15	0%	0.00	Gettelfinger	"Standard" shims have a lower COF than "High COF" shims and do not require special materials to be ordered. May be moot.							
17	Perform additional COF tests (LN2 testing, cyclic tests, COF versus normal pressure, etc) for standard shims	5.00	2/5/07	2/9/07	16	0%	5.00	Gettelfinger								
18	Procure material for high COF shims.	15.00	1/29/07	2/16/07	15	0%	0.00	Gettlefinger								
19	Perform additional COF tests (LN2 testing, cyclic tests, COF versus normal pressure, etc) for high COF shims	10.00	2/19/07	3/2/07	17, 18	0%	0.00	Gettelfinger								
20	Assess implications of pressure-dependent COF for shim design	5.00	3/5/07	3/9/07	19	0%	0.00	Brooks								
21	Document and conduct peer review of test results.	5.00	3/12/07	3/16/07	20	0%	0.00	Gettlefinger								
22	Define geometry of standard shim	1.00	1/19/07	1/19/07		100%	0.00	Williamson	Done. Gary McGinnis prepared this concept for an individual shim with a surface area of ~11-in <sup>2</sup> . Special shims may be required around midplane port.							
23	Measure flanges on finished coils to determine range of shim thicknesses required.	10.00	1/22/07	2/2/07		0%	30.00	Viola	Thought to be 0.5+/-0.025". Brooks suggested 3mil increments in							
										J	F	M	A	M	J	J









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78	Choose tools for tightening nuts. Define features needed to tighten nut (including measuring preload). Determine which holes have adequate space to tighten nuts using templates. Repeat for special cases where inadequate space exists. Tabulate results.	10.00	1/22/07	2/2/07	31, 33FF+5.00	0%	0.00	Viola	Iterative process								
79	Survey each coil type using templates. Determine stud length constraints based on access limitations for torquing/tensioning.	10.00	2/5/07	2/16/07	78	0%	65.00	Viola									
80	Identify areas that need to be measured in post-VPI and ground	25.00	1/22/07	2/23/07		0%											
81	Identify "close points" when assembling	5.00	1/22/07	1/26/07		0%	15.00	Brown									
82	Perform fits of C-C, C-B, B-A, and A-A	20.00	1/22/07	2/16/07		0%	0.00	Viola									
83	Provide guidance to revise post-VPI procedure to include measurement points	5.00	2/19/07	2/23/07	81, 82	0%	60.00	Brown									
84	Perform trial x-y-z alignments on C1-C2. Demonstrate capability to satisfy alignment requirements with individual shims of uniform thickness.	10.00	1/22/07	2/2/07		0%	0.00	Viola									
85	Establish alignment mechanisms, metrology equipment complement and positioning requirements, etc. Conduct peer review.	5.00	2/5/07	2/9/07	84	0%	0.00	Viola									
86	Procure alignment mechanisms, fiducials, lifting equipment, etc. for assembly operations	40.00	2/12/07	4/6/07	85	0%	15.00	Dudek									
											J	F	M	A	M	J	J

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										J	F	M	A	M	J	J	
87	Develop procedures for torquing bolts	5.00	2/26/07	3/2/07	39, 84	0%	0.00	Viola									
88	Determine fiducial types and locations	10.00	3/5/07	3/16/07	87	0%	0.00	Viola									
89	Procure monuments and related metrology equipment	30.00	3/19/07	4/27/07	88	0%	0.00	Dudek									
90	Tools and tooling available for FPA operations	0.00	4/27/07	4/27/07	39, 86, 89	0%	15.00										
91	Prototype bladder installation.	5.00	2/19/07	2/23/07	7	0%	0.00	Viola									
92																	
93	Finalize preparations for assembly operations	20.00	4/18/07	5/15/07		0%											
94	Document assembly sequence	5.00	4/18/07	4/24/07	8, 25, 46, 56	0%	0.00	Brown									
95	Finalize dimensional control plan	5.00	4/25/07	5/1/07	94	0%	0.00	Ellis									
96	Finalize assembly procedure	5.00	5/2/07	5/8/07	95	0%	0.00	Viola									
97	Establish back office support requirements and data flow	5.00	5/9/07	5/15/07	96	0%	0.00	Viola									
98	Train technicians in operation of the metrology equipment and measurement procedures	5.00	5/9/07	5/15/07	96	0%	0.00	Viola									
99	RLM authorization for assembly operations	0.00	5/15/07	5/15/07	97, 98	0%	3.00	Dudek									
100																	
101	Start Station 2 assembly operations	0.00	5/18/07	5/18/07	11, 27, 37, 58, 74, 90	0%	0.00	Viola									
										J	F	M	A	M	J	J	