

**Cost Center:** 9417  
**Job Number:** 5501  
**Job Title:** Coil Bus Runs  
**Job Manager:** Mark Smith

**Estimate (user input)**

task #	TASK DESCRIPTION	Responsible	Duration in Work Days	Estimate (user input)																				CONTINGENCY %	Basis of Estimate Category						
				FY09\$K					HOURS (priced at FY09 rates)																	%					
			Total	M&S (41)	CREDIT CARD (43)	Slk Room	TRAVEL (36)	OVERTIME (31)	EA** EM (analysis engr)	EA** (Designer)	EC** EM (computing Engr)	EC** SB (Computing Tech)	EC** TB (Computing Tech)	EE** EM (Electr Engr)	EE** SM (Senior Electr Tech)	EE** SB (Electr Tech)	EE** TB (Electr Tech)	EM** EM (FO&M Engr)	EM** SM Senior Tech	MEIGHAN	EM** SB (FO&M Tech)	EM** TB (FO&M Tech)	DP** SB/TB (HP Tech)	R*** RM (Researcher)	D*** RM2 (Researcher)	FC** AM (P&C Officer)	RESA Machinist				
1																															
15	NOTE: bus run design (routes) are determined by the remaining / available space.																														
16	Other component design takes precedence. Therefore, except for the coaxial portion																														
17	of the OH bus, all bus runs will be field fit / fabricated and then installed. Therefore, it is																														
18	cost effective to finalize / validate the design immediately prior to installation.																														
19																															
20	For the FDR, preliminary design and bus routing have been determined and analyzed.																														
21	Assembly and detailed fabrication drawings are available for review.																														
22																															
23	Prior to installation, design finalization and validation analysis will occur. All drawings																														
24	at that time can be updated and signed off/released.																														
25																															
26																															
27																															
28																															
29																															
30	<b>Final Design</b>								160									8											5%	2,4,9,11	
31																															
32	<b>OH Coaxial &amp; Standard Bus</b>																														
33	Busbar System Design																														
34	Analysis / Calculations: EM, Stress, Thermal																														
35	Assembly and Detailed drawings ready for FDR								12																				5%	2,4,9,11	
36																															
37	<b>PF Bus</b>																														
38	Busbar System Design																														
39	Analysis / Calculations: EM, Stress, Thermal																														
40	Assembly and Detailed drawings ready for FDR								12																				5%	2,4,9,11	
41																															
42	<b>TF Bus</b>																														
43	Busbar System Design																														
44	Analysis / Calculations: EM, Stress, Thermal																														
45	Assembly and Detailed drawings ready for FDR								16																				5%	2,4,9,11	
46																															
47	<b>CHI Ring Bus</b>																														
48	Busbar System Design																														
49	Analysis / Calculations: EM, Stress, Thermal																														
50	Assembly and Detailed drawings ready for FDR								8																				5%	2,4,9,11	
51																															
52	Calculation completed/reviewed/checked/signed								40									8											5%	2,4,9,11	
53	FDR Prep								8									16											5%	2,4,9,11	
54	FDR																														
55																															

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			<b>Estimate (user input)</b>																										
<b>SCHEDULE</b>			<b>FY09\$K</b>					<b>HOURS (priced at FY09 rates)</b>															<b>%</b>						
<b>USER INPUT TASKS AND DESCRIPTIONS</b>			<b>USER INPUT</b>																										
task	TASK DESCRIPTION	Responsible	Total	M&S (41)	CREDIT CARD (43)	Slk Room	TRAVEL (36)	OVERTIME (31)	EA** EM (analysis engr)	EA** (Designer)	EC** EM (computing Engr)	EC** SB (Computing Tech)	EC** TB (Computing Tech)	EE** EM (Eictr Engr)	EE** SM (Senior Electr Tech)	EE** SB (Electr Tech)	EE** TB (Electr Tech)	EM** EM (FO&M Engr)	EM** SM Senior Tech	MEIGHAN	EM** SB (FO&M Tech)	EM** TB (FO&M Tech)	DP** SB/TB (HP Tech)	R*** RM (Researcher)	D*** RM2 (Researcher)	FC** AM (P&C Officer)	RESA Machinist	CONTINGENCY %	Basis of Estimate Category
#			1.23	###	###	###	###		188.6	124.9	139.7	101.3	74.4	173.4	151	119	84.4	159.9	150.9	119.2	90.3	142.83	177	208.3	150.77	95.31			
56	<b>Procurement (LOE @ 0.25*#of days)</b>								15									60									20%	2,4,9	
57																													
58	Prep Req & Procurement Package																	120									10%	2,4,9	
60																													
61	Copper Total		\$27															2	8			8					20%	2,4,9	
62	Insulation & Protection Total		\$11															2	8			8					20%	2,4,9	
63	SS Hardware, Fittings, Materials Total		\$15															2	8			8					20%	2,4,9	
64	G10 FR4 Total		\$7															2	8			8					20%	2,4,9	
65	Fab & Safety Consumables Total		\$5															2	8			8					20%	2,4,9	
66	Struc Support Material Total		\$3															2	8			8					20%	2,4,9	
67	Misc Total		\$13																										
68	OH Coaxial Bus		\$3															2	8			8					20%	2,4,9	
70																													
71	Approx: 100 CAD models & 45 drawings																												
72	Finalize Bus Routes & Supports								190									38									10%	2,4,9,11	
73	Validation Analysis							240										48									10%	2,4,9,11	
74	Calculation Completed							120										16									10%	2,4,9,11	
75	Update Drawings							180										90									10%	2,4,9,11	
96	<b>Fab/Assembly</b>		\$4															120				<b>3,520</b>			320		20%	2,4,9	
97	<b>OH Bus</b>																										20%	2,4,9	
98	Documentation: Fab/Assy Procedure							8		8								40									20%	2,4,9	
99	Fabrication: pre-installation components																										20%	2,4,9	
100	Electrical Testing																8			8							20%	2,4,9	
101	Parts Ready for Field fit up & Installation																										20%	2,4,9	
102																											20%	2,4,9	
103																											20%	2,4,9	
104	<b>PF Bus</b>																										20%	2,4,9	
105	Documentation: Fab/Assy Procedure							8		8								40									20%	2,4,9	
106	Fabrication: pre-installation components																8			8							20%	2,4,9	
107	Parts Ready for Field fit up & Installation																										20%	2,4,9	
108	<b>TF Bus</b>																										20%	2,4,9	
109	Documentation: Fab/Assy Procedure							8		8								32									20%	2,4,9	
110	Fabrication: pre-installation components																8			8							20%	2,4,9	
111	Parts Ready for Field fit up & Installation																										20%	2,4,9	
112	<b>CHI Bus</b>																										20%	2,4,9	
113	Documentation: Fab/Assy Procedure							8		8								32									20%	2,4,9	
114	Fabrication: pre-installation components															8				8							20%	2,4,9	
115	Parts Ready for Field fit up & Installation																										20%	2,4,9	
116	<b>Installation</b>	Mike Viola	\$21					200	160					40				256								880	20%	2,4,9	

