

**Research Support Building and Infrastructure (RSB) Project
Risk Registry**

ID No.	Risk Title	Date Submitted	Submitted by	Date Last Revised	Owner	IF	THEN	Risk Timeframe: Which phase could this event occur? Design, Construction, Start Up & Testing, Operations	Probability of Event (Level or %)	Basis of Ranking	Current Cost Impact Estimates (use \$k) O: Optimistic, M: Most Likely, P: Pessimistic			Schedule Impact (use time in months) O: Optimistic, M: Most Likely, P: Pessimistic			Basis for Estimate	Overview of Risk Handling Plan	Risk Handling Approach: Avoid, Mitigate, Transfer, Accept	Steps and Schedule for Handling the Plan	Risk Retired - Contingency Resources Released (Mark "X" for Yes)
											O	M	P	O	M	P					
1.0	Contractor non-performance or poor performance.	27-Jan-09		27-Jan-09	Lori Plummer				Parent												
1.1	Subcontractor non-performance or poor performance.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Construction	0.05				1 mon		2 mon	Due to lack of IPP					
1.2	General contractor non-performance or poor performance.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Construction	0.01				6 mon		12 mon						
1.3	Corrective actions due to contractor non-performance or poor performance.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Construction	.05-.10				10 wks		15 wks						
2.0	Rework due to poor quality or doesn't meet contractor specifications.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Construction	.05-.10				2 wks		2 mon						
3.0	Contractor damages existing utility system.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Construction	.15-.25		50k	100k	1 wk		2 wks			Mitigate	Put cost of damages into contract.		
4.0	SLAC causes delay in construction schedule (procedure changes, changes in requirements, funding).	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Construction	0.05		25k	50k	1 wk		6 wks						
5.0	Scope increase on bldg 41 due to interface issues.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Construction	0.05		25k	75k	1 mon		2 mon			Mitigate	System assessment to identify interface, equipment and condition.		
6.0	Labor shortage and/or commodity price increase.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Construction	Parent												
6.1	Labor shortage, pre-award.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Construction	0.05				2 wks		8 wks						
6.2	Labor shortage, post-award.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Construction	.01-.02		1 M	3 M									
7.0	Cost higher than fair cost estimate.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Construction	Not Fully Assessed												
8.0	Lack of adequate resources (Project eam) results in inadequate fair cost estimate.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Design	Parent												
8.1	Lack of adequate resources (Project eam) results in inadequate fair cost estimate for RSB.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Design	0.05				4 wks		6 wks			Mitigate	Develop resource/staffing analysis (gap analysis).		
8.2	Lack of adequate resources (Project eam) results in inadequate fair cost estimate for Bld 3.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Design	0.05					4 wks				Mitigate	Develop resource/staffing analysis (gap analysis).		
8.3	Lack of adequate resources (Project eam) results in inadequate fair cost estimate for Bld 24.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Design	0.20				4 wks		6 wks			Mitigate	Develop resource/staffing analysis (gap analysis).		
8.4	Lack of adequate resources (Project eam) results in inadequate fair cost estimate for Bld 41.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Design	0.15				4 wks		6 wks			Mitigate	Develop resource/staffing analysis (gap analysis).		
9.0	Errors and omissions in design by A/E result in increased construction costs and re-design.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Design	1.00	10% of Construction	6% of Construction		1 mon		2 mon						

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1.0	Contractor non-performance or poor performance.	27-Jan-09		27-Jan-09	Lori Plummer				Parent												
10.0	Inadequate validation of as-build condition results in inadequate design.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Construction	Parent												
10.1	Inadequate validation of as-build condition results in inadequate design for Bld 3.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Construction	0.05		100k		2 wks		4 wks		Mitigate	Strip/do not revise anything.			
10.2	Inadequate validation of as-build condition results in inadequate design for Bld 24.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Construction	0.20		100k		200k	6 wks		8 wks					
10.3	Inadequate validation of as-build condition results in inadequate design for Bld 41.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Construction	0.25		100k		500k	6 wks		8 wks		Mitigate	Independent assessment of as-build condition (field verification).		
11	Long lead items delay schedule.	27-Jan-09	Committee	27-Jan-09	Lori Plummer		Items missing or don't show up on time.	Design	0.05					2 wks		4 wks					
12	AE/CM design interface delays	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Design	0.10					3 mon		6 mon					
13	Design changes.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Design	0.25		300k		600k	1 mon		3 mon	100 to 200k per project.				
14	Unknown contamination found during excavation.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Design	Parent												
14.1	Unknown contamination found during excavation at RSB.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Design	.10-.15					2 wks		4 wks		Mitigate	HAZWOPER training for general and demolition contractor. Ensure demolition contractor has experience with old trailers.		
14.2	Unknown contamination found during excavation at Bld 3.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Design	.25-.35					2 wks				Mitigate	HAZWOPER training for general and demolition contractor.		
14.3	Unknown contamination found during excavation at Bld 24.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Design	.25-.30					2 wks				Mitigate	HAZWOPER training for general and demolition contractor.		
14.4	Unknown contamination found during excavation at Bld 41.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Design	.15-.20					2 wks				Mitigate	HAZWOPER training for general and demolition contractor.		
15	Poor performance by AE contractor.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Design	Parent												
15.1	Poor performance by AE contractor - corrective.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Design	0.15					1 wk		2 wks					
15.2	Poor performance by AE contractor - terminate/replace.	27-Jan-09	Committee	27-Jan-09	Lori Plummer			Design	0.05					6 mon		12 mon					
16.0	Continuing resolution delays project (FY10 at least)	27-Jan-09	Committee	27-Jan-09	DOE				0.25					1 mon		3 mon		Mitigate	Planning exercise to address possible delay.		
17.0	Less funding than planned.	27-Jan-09	Committee	27-Jan-09	DOE				0.50					2 mon		6 mon	Upper bound is delay in major contract award				

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1.0	Contractor non-performance or poor performance.	27-Jan-09		27-Jan-09	Lori Plummer				Parent												
18.0	Change in acquisition executive.	27-Jan-09	Committee	27-Jan-09	DOE				0.10				0 mon		6 mon						
19.0	Additional review cycle during CD process.	27-Jan-09	Committee	27-Jan-09	DOE				0.10				0 mon		3 mon						
20.0	Review deficiencies requires additional review.	27-Jan-09	Committee	27-Jan-09	DOE				0.10				1 mon		3 mon			Mitigate	Weekly calls with HQ (communication). Observe Lehman reviews.		
21.0	Multi-project construction staff logistics problems delay project.	27-Jan-09	Committee	27-Jan-09	Jesse Albino		Site Hazards, Sechedule Delays, Need for traffic control.		0.10	50k	100k		1 wk		2 wks	10k/day		Mitigate	Have contractor provide laydown/logistics plan for managing construction site, and staging areas. Coordinate with other on-site projects not related to the RSB Project.		
22.0	Contractor strikes.	27-Jan-09	Committee	27-Jan-09	Jesse Albino				0.05				1 wk		2 wks			Mitigate	Labor harmony agreement.		
23.0	Weather delays.	27-Jan-09	Committee	27-Jan-09	Jesse Albino				0.20						2 wks			Mitigate	Include weather allowance in contract.		
24.0	LEED requirements change from version 2.2 to version 2.3 after final design. (RSB, Bids 24 and 41)	28-Jan-09	Committee	28-Jan-09	Jon Steward				0.15		750k		1 mon		3 mon	Up to 25% of design cost.		Mitigate	Register project as soon as possible.		
25.0	High performance sustainable building (HPSB) requirements change after final design. (Bid 3)	28-Jan-09	Committee	28-Jan-09	Jon Steward				0.05				1 mon		3 mon						
26.0	Stanford award fee may be impacted if gold standard not met.	28-Jan-09	Committee	28-Jan-09	Jon Steward				Not Fully Assessed												
27.0	Commissioning plan doesn't well define expectations/requirements of construction/commissioning contractors and delays beneficial occupancy and facility acceptance. Requires rework changes.	28-Jan-09	Committee	28-Jan-09	Javier Sevilla				Parent												
27.1	Commissioning plan doesn't well define expectations/requirements of construction/commissioning contractors and delays beneficial occupancy and facility acceptance. Requires rework changes. Commissioning agent hired during design phase.	28-Jan-09	Committee	28-Jan-09	Javier Sevilla				0.05	100k	500k		1 mon		2 mon			Mitigate	Hire commissioning agent to support during the design phase.		
27.2	Commissioning plan doesn't well define expectations/requirements of construction/commissioning contractors and delays beneficial occupancy and facility acceptance. Requires rework changes. Commissioning agent hired during construction phase.	28-Jan-09	Committee	28-Jan-09	Javier Sevilla				0.50	100k	500k		1 mon		2 mon			Mitigate	Hire commissioning agent to support during the design phase.		
28.0	Design failure not discovered until startup and esting.	28-Jan-09	Committee	28-Jan-09	Javier Sevilla				0.05	100k	1M		3 mon		6 mon			Mitigate	Proper design review (resources and time). Make sure there is a well defined commissioning plan prior to procurement. Ensure that there are no gaps between design and commissioning/testing plans.		
29.0	Trailer utility isolation scope is not well identified. Causes delayed start of RSB construction and increased demolition cost.	27-Jan-09	Committee	27-Jan-09					.10-.15	10k	20k		1 wk		4 wks			Mitigate	Review of historical as-builts.		
30.0	Existing utilities must be relocated.	27-Jan-09	Committee	27-Jan-09					0.15	20k	40k		1 mon		3 mon			Mitigate	Potholing for utilities during design phase. (Likelihood increases to 30% if no potholing).		
31.0	Injury or death. Affects project and SLAC (non-project).	27-Jan-09	Committee	27-Jan-09					0.01	2.3 M	4.1 M		6 mon		12 mon	500k for investigation + 300k/mo					

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1.0	Contractor non-performance or poor performance.	27-Jan-09		27-Jan-09	Lori Plummer				Parent												
32.0	Tracing of control wires and relocating in Bld 3 can't be done within the LINAC downtime window. Must wait a year for next downtime window.	27-Jan-09	Committee	27-Jan-09					.20-.30		100k		4M		1 yr				Mitigate	Alternate space evaluation. Early tracing during early outage.	
33.0	Tracing of control wires and relocating in Bld 3 takes longer and delays LINAC downtime window. Laboratory impact.	27-Jan-09	Committee	27-Jan-09					0.20						1 month				Mitigate	Early training.	
34.0	Subcontractors protest pre-qualifications or contract award decisions that may cause schedule slip.	28-Jan-09	Committee	28-Jan-09	Procurement			Construction	0.05						1 mon		2 mon		Mitigate	Follow the Procurement Team Standard Procedures	
35.0	Submittal of contractor claims exceeds allocated budget.	28-Jan-09	Committee	28-Jan-09	PM			Construction	1.00		500k		3M				ROM				
36.0	Subcontractor availability.	28-Jan-09	Committee	28-Jan-09	PM			Construction	0.10		3M		6M		1 mon		3 mon		Mitigate	Pre-contract discussions.	
37.0	Program changes.	28-Jan-09	Committee	28-Jan-09	PM			Construction/Commissioning	0.10										Mitigate	Provide Bid/Build options to expedite scope change/reduction if necessary.	
38.0	Loss of key SLAC management personnel.	28-Jan-09	Committee	28-Jan-09	PM				0.05						0 mon		1 mon		Mitigate	Manage Org Chart to facilitate expedited re-organization if necessary.	
39.0	BIO review and approval.	28-Jan-09	Committee	28-Jan-09	Operations			Construction	0.01						1 wk		2 wks		Mitigate	Active communication.	
40.0	GC bids higher than fair cost estimate.	28-Jan-09	Committee	28-Jan-09	Procurement/Estimator/PM			Construction	0.35				6 M				10% of const cost (~61.2M)				
41.0	SLAC support costs not adequately established.	28-Jan-09	Committee	28-Jan-09	PM			Design/Construction	0.15												
42.0	Act of god (i.e., inclement weather, seismic, etc.)	28-Jan-09	Committee	28-Jan-09					0.01												
43.0	Public enters Construction Area	28-Jan-09	Committee	2-Feb-09	Security		Accident/ Injury	Construction	0.01										Mitigate	Ensure Construction area is well gated and controlled.	
44.0	Procurement Delays	28-Jan-09	Committee	2-Feb-09	Procurement	Staff availability causes delays	Contract not out to bid in timely fashion	Procurement	0.15						1 wk		2wks		Mitigate	Advance Procurement Plan in place	
44.1	Procurement Delays	28-Jan-09	Committee	2-Feb-09	Procurement/PM	Contractor issues with safety and other contractual	Contract not started in a timely fashion	Procurement	0.50						2wks		4wks		Mitigate	PM Coordinates with Procurement, ES&H and contractor.	
44.2	Procurement Delays	28-Jan-09	Committee	2-Feb-09	Procurement	Lack of Sufficient Bidders	Contract not back from bid in timely fashion	Procurement	0.05						3mos		6mos		Mitigate	Pre-qualification of bidders.	
45.0	Down Time	28-Jan-09	Committee	2-Feb-09	Lori Plummer	PPA Does not do tracing of control wires for B003 in the necessary time frame.	Project must wait until following year's down time	Construction	0.05	.20 - .30	\$100		\$4,000		1yr	1yr	1yr		Mitigate	Find alternate office space for people schedule to move to B003 after re-furbishment. Early tracing during currently unscheduled early outages may be possible.	
46.0	Staff Migration	8-May-09	Committee	8-May-09	PM/Transition Manager	Staff is moved out of construction areas, and no offices are available for them to move into.	Temporary offices will need to be established to house the displaced staff.	Construction	0.80						1mon	3mos	6mos		Mitigate	Strategy and Process must be established to minimize the number of staff displaced, and/or establish temporary housing ahead of schedule.	