

BASELINE CHANGE PROPOSAL (BCP)

1) BCP Number: DZero 001		2) BCP Title: Project Rebaseline	
3) Budget Number:		4) Title: Run IIb D-Zero Detector Project	
5) Date Received (Field Office):		Date Received (Program Office):	
6) Change Designation: Scope Reduction	7) BCP Level: Level 0 [<input type="checkbox"/>] Level 2 [<input type="checkbox"/>] Level 1 [<input checked="" type="checkbox"/>] Level 3 [<input type="checkbox"/>]	8) Directed Change? Yes [<input checked="" type="checkbox"/>] No [<input type="checkbox"/>]	9) Program: SC-20, Office of High Energy Physics
10) Point of Contact: Paul Philp		12) FAX: (630)840-3285	
11) Phone: (630) 840-4481		13) Location: FAO	
<p>14) Change Description:</p> <p>WBS 1.1 – Silicon Detector Upgrade The full replacement silicon detector will no longer be constructed or installed. A descoped device, consisting of a single inner layer of silicon and for which a new WBS number (1.6) has been assigned, is being constructed.</p> <p>WBS 1.2 – Trigger WBS 1.2.8 AFE/TRiP upgrade has been added.</p> <p>WBS 1.4 – Project Administration This scope will be reduced to accommodate the descoping of WBS 1.1.</p> <p>WBS 1.6 – Silicon Layer 0 This subproject will be added.</p>			
<p>15) Change Justification: (If Directed Change specify authority and documentation)</p> <p>The changes described here result from a decision by the Director of Fermilab to descope the silicon upgrade portion of the project. A full discussion of his decision can be obtained from http://www.fnal.gov/pub/now/Upgrade_Decision/index.html. This decision was supported by a subpanel of HEPAP at its September 29, 2003 meeting.</p>			
<p>16) Impact of Non-Approval:</p> <p>The decision of the Director is that the silicon detector will not be completed. This BCP reflects that decision and includes changes to mitigate the resulting loss of detector performance. If not approved, changes that result from the new baseline will not be met and detector functionality will be severely compromised.</p>			

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17) Impact on DOE	Baseline (As of June 2003)	Proposed	Change			
Cost Baseline:						
MIE Base	\$ 14.1M	\$ 6.7M	\$ -7.4M			
MIE Contingency	6.5M	3.2M	-3.3M			
R&D	<u>3.9M</u>	<u>5.8M</u>	<u>+1.9M</u>			
Total DOE	\$ 24.5M	\$ 15.7M	\$ -8.8M			
18) Impact on Funding Profile (BA):						
Approval of this Baseline Change Proposal will provide DOE MIE funds in FY 2004 and FY 2005. The changes to the DOE funding profile are shown below:						
		Prior FY	FY04	FY05	FY06	Total
Baseline (\$M)	MIE	6.2	8.6	5.8	0.0	20.6
	R&D	3.9	0.0	0.0	0.0	3.9
	Total DOE	10.1	8.6	5.8	0.0	24.5
Proposed (\$M)	MIE	6.2	1.0	2.7	0.0	9.9
	R&D	3.9	1.9	0.0	0.0	5.8
	Total DOE	10.1	2.9	2.7	0.0	15.7
Change (\$M)	MIE	-	-7.6	-3.1	0.0	-10.7
	R&D	-	1.9	0.0	0.0	1.9
	Total DOE	-	-5.7	-3.1	0.0	-8.8
19) Explanation of Impact on Cost and Funding Baseline:						
The project cost is significantly reduced by the descoping of the full upgrade silicon detector. The activities relating to this WBS will now be limited to the completion of some prototype pieces, which will culminate in the publishing of results of the R&D phase of the project. Costs incurred to date, and the remaining costs to close out the silicon activity, will be removed from the MIE funding and transferred to Research and Development accounts. This accounts for the increase in R&D funding for FY04, which covers close out costs and obligations in place at the time of the descoping. Costs of the silicon layer 0 detector and the AFE/TRiP upgrade are included in the revised MIE baseline. In addition, descoping the silicon project has caused one of the trigger groups who had brought with them substantial in-kind funding to withdraw from the project, which has been added to the base TEC. The new baseline requires substantially less project administration, which is reflected in the cost and funding baseline.						
20) Impact on Schedule Baseline:						
Milestones referring to the full silicon upgrade within WBS 1.1 will be eliminated from the baseline. The silicon completion date is unchanged. Milestone (1.5) is delayed.						
Milestone (No. and Description)	Baseline (Month/Year)	Proposed (Month/Year)	Change			
CD-3b	9/03	11/03	8 weeks			
CD-4	11/06	11/06	0 weeks			
D-Zero 1.1	12/04	-	Dropped			
D-Zero 1.3	12/05	-	Dropped			
D-Zero 1.5	1/06	4/06	12 weeks			
21) Explanation of Impact on Schedule Baseline:						
The CD-3b approval milestone has been delayed to Nov. 2003 to allow the extra time needed to adequately prepare the BCP and CD-3b approval documents. Milestone (1.5) is delayed to allow for completion of the AFE II/TRiP upgrade.						

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<p>22) Impact on Scope Baseline: An inner layer of silicon (the layer 0) is being retained to both enhance the performance of the existing silicon detector, and to mitigate any performance degradation due to aging. It will be mounted on the Run IIb beryllium beampipe, which has already been purchased. Additional trigger functionality has been added to improve the tracking trigger and efficiency in light of the substantial descoping of the full silicon upgrade. The Project Administration has been descoped to accommodate the reduction of overall scale of the project.</p>	
<p>23) Explanation of Impact on Scope Baseline: Additional procurements in support of the Silicon Detector subproject current baseline will not be placed. Some contracts already underway will be terminated for convenience. Some prototypical stages of the Silicon Detectors will be completed, tested, documented and results published. The silicon layer 0 detector is a cost effective way of enhancing and maintaining b-tagging and tracking efficiency. The AFE/TriP upgrade augments the tracking readout and triggering functionality to maintain adequate performance in light of the descoped silicon detector. Because of the overall decrease in scope, the remaining Project Administration (WBS 1.4) has been decreased by a factor of two.</p>	
<p>24) Other Impacts (Health, Safety, Environment, etc.) None</p>	

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25) Interim or Corrective Actions: Efforts at the Silicon Detector (SiDet) fabrication facility have been tentatively redirected to support the actions proposed in this BCP.	
FIELD DISPOSITION - LEVEL 2	
26) Members	Recommendations
_____ Paul Philp Run II Project Director Fermi Area Office _____ Date	Draft
_____ Jane L. Monhart Fermi Area Office Manager _____ Date	
PROGRAM DISPOSITION - LEVEL 1	
27) Advisors (Specialized Support, as required)	Recommendations
_____ Michael Procaro Run IIb Program Manager Office of High Energy Physics _____ Date	
ACQUISITION EXECUTIVE - LEVEL 1	
Disposition <input type="checkbox"/> Approved <input type="checkbox"/> Endorsed <input type="checkbox"/> Rejected	Comments:
_____ Robin Staffin Associate Director Office of High Energy Physics _____ Date	