



**Muon Campus AIP**  
**Change Request Form**

CR#:Cryo017

1) DATE: 5/31/16	2) WBS: Cryo1.10	3) Originator: Ken Domann <i>KAD</i>
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4) WBS Description of Primary Affected Tasks: Cryo Distribution Box (CDB)

5) Technical Description & Primary Motivation for Change: This change incorporates the vendor progress payment schedule for the Cryo Distribution Box. In addition, the awarded value represents a reduction in the original estimate. Overall, the Cryo AIP budget is reduced by \$225,518, with a corresponding increase in contingency.

6) Assessment of Cost Impact (Use attachments if needed): See attached.

7) Assessment of Schedule Impact (Use attachments if needed): See attached, there is no impact to any key milestones.

8) Secondary Impact & Other Comments: N/A

9) Approvals:		
AIP Project Manager:	<i>Michael / L</i>	Date: 6-1-2016
AIP Project Coordinator:	<i>Mary E</i>	Date: 6/2/16
AD Div Director:		Date:
Directorate:		Date:

## Cryo CR017 Schedule Information

UID	WBS	Name	Start	Finish	Comments
2937	Cryo1.10	Cryo Distribution Box (CDB)	4/15/15	5/26/17	
2962	Cryo1.10.03	Procurement and Fabrication of CDB	2/1/16	4/14/17	
2955	Cryo1.10.03.05	Fermilab Oversight of CDB	5/24/16	4/14/17	New baseline dates
2994	Cryo1.10.03.06	Kickoff Meeting	6/13/16	6/13/16	New task
2995	Cryo1.10.03.07	Vendor Order Weka Valves	6/22/16	6/22/16	New task
2996	Cryo1.10.03.08	Vendor Submit Design and Fermi Approval	8/19/16	8/19/16	New task
2997	Cryo1.10.03.09	Vendor Compl Vessel Code Stmp, Theral Shld Compnts, Trace Tube	11/4/16	11/4/16	New task
2998	Cryo1.10.03.10	Vendor Compl Piping Spool Subassemblies	12/2/16	12/2/16	New task
2954	Cryo1.10.03.11	Vendor Ship CDB to Fermilab	3/10/17	3/10/17	New baseline dates
2953	Cryo1.10.03.12	Fermi Perform safety review of CDB	3/13/17	3/24/17	New baseline dates
2952	Cryo1.10.03.13	Acceptance tests at Fermilab	3/27/17	4/13/17	New baseline dates
2951	Cryo1.10.03.14	CDB received and accepted	4/14/17	4/14/17	New baseline dates
2957	Cryo1.10.03.15	Vendor completed final design and drawings ** Delete **	5/2/16	5/2/16	Deleted
2956	Cryo1.10.03.16	Vendor fabricates CDB ** Delete **	5/2/16	5/2/16	Deleted

**Cryo CR017 Material Delta**

UID	WBS	Name	New M&S	Old M&S	Delta	Comment
2937	Cryo1.10	Cryo Distribution Box (CDB)	\$1,116,742	\$1,315,845	(\$199,103)	
2962	Cryo1.10.03	Procurement and Fabrication of CDB	\$826,700	\$1,025,803	(\$199,103)	
2995	Cryo1.10.03.07	Vendor Order Weka Valves	\$124,005	\$0	\$124,005	New task
2996	Cryo1.10.03.08	Vendor Submit Design and Fermi Approval	\$330,680	\$0	\$330,680	New task
2997	Cryo1.10.03.09	Vendor Compl Vessel Code Stmp, Theral Shld Compnts, Trace Tube	\$165,340	\$0	\$165,340	New task
2998	Cryo1.10.03.10	Vendor Compl Piping Spool Subassemblies	\$82,670	\$0	\$82,670	New task
2951	Cryo1.10.03.14	CDB received and accepted	\$124,005	\$1,025,803	(\$901,798)	Revise M&S

# Cryo Pre CR017 CAP

Control Account	FY13	FY14	FY15	FY16	FY17	Cumulative
Cryo1.02.01.01 Cryo AIP General Project Oversight - FY13	Scheduled	51,346.42	0.00	0.00	0.00	51,346.42
Cryo1.02.01.02 Cryo AIP General Project Oversight - FY14	Scheduled	3,594.06	129,557.05	0.00	0.00	133,151.10
Cryo1.02.01.03 Cryo AIP General Project Oversight - FY15	Scheduled	0.00	2,134.07	30,214.73	0.00	32,348.80
Cryo1.02.01.04 Cryo AIP General Project Oversight - FY16	Scheduled	0.00	0.00	3,820.92	170,506.37	174,327.29
Cryo1.02.01.05 Cryo AIP General Project Oversight - FY17	Scheduled	0.00	0.00	0.00	5,329.44	170,789.04
Cryo1.02.01.07 Cryo AIP Gen Proj OS - FY15 Supp	Scheduled	0.00	0.00	74,049.03	0.00	74,049.03
Cryo1.03 Cryo Basic Engineering	Scheduled	33,093.96	236,082.70	0.00	0.00	269,176.66
Cryo1.04.01 LN2 system	Scheduled	4,514.95	409,013.92	0.00	0.00	413,528.87
Cryo1.04.02 Gas management system	Scheduled	57,841.53	178,224.26	0.00	0.00	236,065.78
Cryo1.04.03 ODH system	Scheduled	0.00	49,757.63	0.00	0.00	49,757.63
Cryo1.04.04 Cryo Refrigerator system	Scheduled	149,077.19	1,134,055.74	152,524.20	0.00	1,435,657.13
Cryo1.04.05 Cryo Compressor System	Scheduled	59,453.27	367,138.94	0.00	0.00	426,592.21
Cryo1.04.06 Cryo Interconnect Piping	Scheduled	225,594.62	512,339.28	0.00	0.00	737,933.91
Cryo1.04.07 Cryo Interconnect Electrical & Controls	Scheduled	46,627.36	119,526.30	0.00	0.00	166,153.66
Cryo1.04.08 Cryogenic Fluids	Scheduled	0.00	0.00	261,857.93	0.00	261,857.93
Cryo1.05.01 MuZe Interface Connection	Scheduled	0.00	70,813.93	320,085.24	646,830.81	1,108,055.00
Cryo1.05.02 g-2 interface connection	Scheduled	27,198.92	0.00	0.00	0.00	27,198.92
Cryo1.06 Cryo Safety Documents	Scheduled	0.00	155,311.42	0.00	0.00	155,311.42
Cryo1.07 Testing/Checkout	Scheduled	0.00	0.00	65,416.12	0.00	65,416.12
Cryo1.08 Cryo g-2 Acceptance Tests	Scheduled	0.00	11,968.50	102,502.33	0.00	114,470.83
Cryo1.09 Cryo MuZe Acceptance Tests	Scheduled	0.00	0.00	0.00	97,077.96	97,077.96
Cryo1.10 Cryo Distribution Box (CDB)	Scheduled	0.00	0.00	322,703.66	515,721.31	838,424.97
Grand Total	Scheduled	658,342.28	3,375,923.74	1,333,174.17	1,338,387.93	8,511,149.23

Cryo Post CR017 CAP

Control Account: WBS (4)	FY12	FY13	FY14	FY15	FY16	FY17	Cumulative
Cryo1.02.01.01 Cryo AIP General Project Oversight - FY13	Scheduled	0.00	51,346.42	0.00	0.00	0.00	51,346.42
Cryo1.02.01.02 Cryo AIP General Project Oversight - FY14	Scheduled	0.00	3,594.06	129,557.05	0.00	0.00	133,151.10
Cryo1.02.01.03 Cryo AIP General Project Oversight - FY15	Scheduled	0.00	0.00	2,134.07	30,214.73	0.00	32,348.80
Cryo1.02.01.04 Cryo AIP General Project Oversight - FY16	Scheduled	0.00	0.00	0.00	3,820.92	170,506.37	174,327.29
Cryo1.02.01.05 Cryo AIP General Project Oversight - FY17	Scheduled	0.00	0.00	0.00	0.00	5,329.44	170,789.04
Cryo1.02.01.07 Cryo AIP Gen Proj 05 - FY15 Supp	Scheduled	0.00	0.00	0.00	74,049.03	0.00	74,049.03
Cryo1.03 Cryo Basic Engineering	Scheduled	0.00	33,093.96	236,082.70	0.00	0.00	269,176.66
Cryo1.04.01 LN2 system	Scheduled	0.00	4,514.95	409,013.92	0.00	0.00	413,528.87
Cryo1.04.02 Gas management system	Scheduled	0.00	57,841.53	178,224.26	0.00	0.00	236,065.78
Cryo1.04.03 ODH system	Scheduled	0.00	0.00	49,757.63	0.00	0.00	49,757.63
Cryo1.04.04 Cryo Refrigerator system	Scheduled	0.00	149,077.19	1,134,055.74	152,524.20	0.00	1,435,657.13
Cryo1.04.05 Cryo Compressor System	Scheduled	0.00	59,453.27	367,138.94	0.00	0.00	426,592.21
Cryo1.04.06 Cryo Interconnect Piping	Scheduled	0.00	225,594.62	512,339.28	0.00	0.00	737,933.91
Cryo1.04.07 Cryo Interconnect Electrical & Controls	Scheduled	0.00	46,627.36	119,526.30	0.00	0.00	166,153.66
Cryo1.04.08 Cryogenic Fluids	Scheduled	0.00	0.00	0.00	261,857.93	0.00	261,857.93
Cryo1.05.01 Mu2e Interface Connection	Scheduled	0.00	0.00	70,813.93	320,085.24	646,830.81	1,108,055.00
Cryo1.05.02 g-2 interface connection	Scheduled	0.00	27,198.92	0.00	0.00	0.00	27,198.92
Cryo1.06 Cryo Safety Documents	Scheduled	0.00	0.00	155,311.42	0.00	0.00	155,311.42
Cryo1.07 Testing/Checkout	Scheduled	0.00	0.00	0.00	65,416.12	70,041.98	135,458.10
Cryo1.08 Cryo g-2 Acceptance Tests	Scheduled	0.00	0.00	11,968.50	102,502.33	0.00	114,470.83
Cryo1.09 Cryo Mu2e Acceptance Tests	Scheduled	0.00	0.00	0.00	0.00	97,077.96	97,077.96
Cryo1.10 Cryo Distribution Box (CDB)	Scheduled	0.00	0.00	0.00	322,703.66	1,105,006.77	2,015,323.58
Grand Total	Scheduled	0.00	658,342.28	3,375,923.74	1,333,174.17	1,927,673.39	8,285,631.28