Muon Campus AIP

Change Request Form

CR#:RRF007

1) DATE: 1/14/15	**2)WBS: RRF1.02.05**	**3) Originator: Ken Domann**

4) WBS Description of Primary Affected Tasks: 8kW 2.4 Mhz RF Cavity System

5) Technical Description & Primary Motivation for Change: This change request adds the above cavity scope, originally contained in the Mu2e project, to the RRF AIP. The value of this change equals the recent total reduction in TPC of the four AIP's as a result of the savings realized from the new finance division overhead rates. This reduction totalled to $999,568. Of this total, $831,559 was added to the RRF budget and $168,009 was added to contingency. The TPC for RRF was increased from $8,231,533 to $9,231,101.

6) Assessment of Cost Impact (Use attachments if needed): See Attachments for changes.

7) Assessment of Schedule Impact (Use attachments if needed): See attachment for new activities.

8) Secondary Impact & Other Comments: N/A

9) Approvals:

AIP Project Manager:		**Date:** 1/22/15
AIP Project Coordinator:		**Date:** 1/22/15
AD Div Director:		**Date:** 1/22/15
Directorate:		**Date:** 1/22/15

Beam Transport CR007 Schedule

WBS	Name	Start	Finish	Float
RRF1.02.05	**8kW 2.4 Mhz RF Cavity System**	**2/9/15**	**8/26/16**	**24 d**
RRF1.02.05.01	**8kW 2.4 Mhz RF Cavity System Cooling System**	**10/1/15**	**8/26/16**	**24 d**
RRF1.02.05.01.01	Award LCW Cooling System Skid Fabrication / Assembly	10/1/15	10/1/15	152 d
RRF1.02.05.01.02	LCW Cooling System Skid Vendor Fabrication / Assembly Fabricate	10/2/15	11/24/15	152 d
RRF1.02.05.01.03	LCW Cooling System Skid Fabrication / Assembly Deliver	11/25/15	11/25/15	152 d
RRF1.02.05.01.04	Install LCW Cooling System Skid	7/1/16	8/26/16	4 d
RRF1.02.05.01.05	Install Pipe, Tube, Ball Valves and Fittings	7/1/16	8/26/16	4 d
RRF1.02.05.01.06	Install Hardware (misc.)	7/1/16	8/26/16	4 d
RRF1.02.05.01.07	Install Monitoring Regulation (misc.)	7/1/16	8/26/16	4 d
RRF1.02.05.01.08	Delivery Ring RF Cooling System Complete	8/26/16	8/26/16	24 d
RRF1.02.05.02	**8kW 2.4 Mhz RF Cavity**	**2/9/15**	**8/4/16**	**40 d**
RRF1.02.05.02.01	Award Delivery Ring 8kW 2.4 MHz RF System	2/9/15	2/9/15	112 d
RRF1.02.05.02.02	Delivery Ring 8kW 2.4 Mhz Solid State Driver Vendor Fabricate	2/10/15	11/18/15	112 d
RRF1.02.05.02.03	Delivery Ring 8kW 2.4 Mhz Solid State Driver M&S Deliver	11/19/15	11/19/15	112 d
RRF1.02.05.02.04	Testing of 8kW 2.4 MHz solid state driver	11/20/15	12/21/15	112 d
RRF1.02.05.02.05	Delivery Ring 8KW 2.4 MHz solid state driver RF tests complete	12/21/15	12/21/15	112 d
RRF1.02.05.02.06	PLC interface to 8kW 2.4 MHz solid state driver	12/22/15	2/22/16	112 d
RRF1.02.05.02.08	Stands Installed	7/1/16	7/7/16	20 d
RRF1.02.05.02.09	Lower Cavity into Delivery Ring	7/8/16	7/11/16	20 d
RRF1.02.05.02.10	Vacuum Pipe Installation	7/12/16	7/15/16	20 d
RRF1.02.05.02.11	Install Cavity	7/18/16	7/19/16	20 d
RRF1.02.05.02.12	Survey Installed Cavity	7/20/16	7/21/16	20 d
RRF1.02.05.02.13	Vacuum Hook Up	7/22/16	7/25/16	20 d
RRF1.02.05.02.14	Pump Down / Leak Check	7/26/16	7/29/16	20 d
RRF1.02.05.02.15	LCW Installation	8/1/16	8/4/16	20 d
RRF1.02.05.02.16	Delivery Ring 2.4 MHz RF Installation Complete	8/4/16	8/4/16	40 d

RRF CR007 Material Delta

UID	WBS	Name	Start	Finish	Original M&S	New M&S	Delta
140	**RRF1.02.05**	**8kW 2.4 Mhz RF Cavity System**	**2/9/15**	**8/26/16**	**$0**	**$522,939**	**$522,939**
141	**RRF1.02.05.01**	**8kW 2.4 Mhz RF Cavity System Cooling System**	**10/1/15**	**8/26/16**	**$0**	**$1,858,119**	**$1,858,119**
151	RRF1.02.05.01.01	Award LCW Cooling System Skid Fabrication / Assembly	10/1/15	10/1/15	$0	$185,119	$185,119
143	**RRF1.02.05.02**	**8kW 2.4 Mhz RF Cavity**	**2/9/15**	**8/4/16**	**$0**	**$337,820**	**$337,820**
154	RRF1.02.05.02.03	Delivery Ring 8kW 2.4 Mhz Solid State Driver M&S Deliver	11/19/15	11/19/15	$0	$334,600	$334,600
158	RRF1.02.05.02.08	Stands Installed	7/1/16	7/7/16	$0	$600	$600
159	RRF1.02.05.02.09	Lower Cavity into Delivery Ring	7/8/16	7/11/16	$0	$2,400	$2,400
165	RRF1.02.05.02.15	LCW Installation	8/1/16	8/4/16	$0	$220	$220

RRF CR007 Labor Delta

WBS	Name	Dur	Resource	Hours
RRF1.02.05	**8kW 2.4 Mhz RF Cavity System**	536 d		**1,499**
RRF1.02.05.01	**8kW 2.4 Mhz RF Cavity System Cooling System**	536 d		**1,075**
RRF1.02.05.01.01	Award LCW Cooling System Skid Fabrication / Assembly	1 d		0
RRF1.02.05.01.02	LCW Cooling System Skid Vendor Fabrication / Assembly Fabricate	38 d		0
RRF1.02.05.01.03	LCW Cooling System Skid Fabrication / Assembly Deliver	1 d		0
RRF1.02.05.01.04	Install LCW Cooling System Skid	40 d	FNAD_ELEC_DRAFTER[28%],FNAD_ELTN_DESIGN_EN[9%],FNAD_MECH_DESIGN_EN[16%], FNAD_MECH_DRAFTER[38%],FNAD_MECH_SYSTM_TECH[13%]	332
RRF1.02.05.01.05	Install Pipe, Tube, Ball Valves and Fittings	40 d	FNAD_ELTN_DESIGN_EN[9%],FNAD_MECH_DESIGN_EN[17%],FNAD_MECH_SYSTM_TECH[:	593
RRF1.02.05.01.06	Install Hardware (misc.)	40 d	FNAD_MECH_SYSTM_TECH[8%]	25
RRF1.02.05.01.07	Install Monitoring Regulation (misc.)	40 d	FNAD_ELTN_DESIGN_EN[9%],FNAD_MECH_DESIGN_EN[16%],FNAD_MECH_SYSTM_TECH[:	125
RRF1.02.05.01.08	Delivery Ring RF Cooling System Complete	0 d		0
RRF1.02.05.02	**8kW 2.4 Mhz RF Cavity**	400 d		**424**
RRF1.02.05.02.01	Award Delivery Ring 8kW 2.4 MHz RF System	1 d		0
RRF1.02.05.02.02	Delivery Ring 8kW 2.4 Mhz Solid State Driver Vendor Fabricate	198 d		0
RRF1.02.05.02.03	Delivery Ring 8kW 2.4 Mhz Solid State Driver M&S Deliver	1 d		0
RRF1.02.05.02.04	Testing of 8kW 2.4 MHz solid state driver	20 d	FNAD_RF_DESIGN_EN[25%],FNAD_ELEC_TECH[50%]	120
RRF1.02.05.02.05	PLC interface to 8kW 2.4 MHz solid state driver	40 d	FNAD_ELEC_TECH[13%],FNAD_RF_DESIGN_EN[50%]	200
RRF1.02.05.02.06	Delivery Ring 8kW 2.4 MHz solid state driver RF testing complete	0 d		0
RRF1.02.05.02.07	Stands Installed	4 d	FNAD_MECH_SYSTM_TECH[38%]	12
RRF1.02.05.02.08	Lower Cavity into Delivery Ring	2 d		0
RRF1.02.05.02.09	Vacuum Pipe Installation	4 d	FNAD_HIGH_VAC_TECH[44%]	14
RRF1.02.05.02.10	Install Cavity	2 d	FNAD_MECH_SYSTM_TECH[75%]	12
RRF1.02.05.02.11	Survey Installed Cavity	2 d	FNPD_GEODEIST[75%],FNPD_METROLOGIST[150%]	36
RRF1.02.05.02.12	Vacuum Hook Up	2 d	FNAD_HIGH_VAC_TECH[25%]	4
RRF1.02.05.02.13	Pump Down / Leak Check	4 d	FNAD_HIGH_VAC_TECH[38%]	12
RRF1.02.05.02.14	LCW Installation	4 d	FNAD_MECH_SYSTM_TECH[44%]	14
RRF1.02.05.02.15	Delivery Ring 2.4 MHz RF Installation Complete	0 d		0

Recycler RF Pre RRF CR007 CAP

Control Account		FY12	FY13	FY14	FY15	FY16	Cumulative
A1302.01.04.01 Recylcer AIP Oversight - FY13							
	Scheduled	0.00	24,910.17	0.00	0.00	0.00	24,910.17
A1302.01.04.02 Recylcer AIP Oversight - FY14							
	Scheduled	0.00	0.00	116,046.75	0.00	0.00	116,046.75
A1302.01.04.03 Recylcer AIP Oversight - FY15							
	Scheduled	0.00	0.00	0.00	95,214.68	0.00	95,214.68
A1302.01.04.04 Recylcer AIP Oversight - FY16							
	Scheduled	0.00	0.00	0.00	0.00	113,927.23	113,927.23
A1302.02.01 Recycler Cavities & Power Amplifiers							
	Scheduled	0.00	99,016.36	627,121.66	2,806,143.51	1,470,334.11	5,002,615.64
A1302.02.02 Recycler RF Cooling							
	Scheduled	0.00	0.00	0.00	4,956.66	486,151.32	491,107.99
A1302.02.03 Recycler Low Level RF							
	Scheduled	0.00	0.00	0.00	3,937.99	171,969.15	175,907.14
A1302.02.04 Recycler RF Installation							
	Scheduled	0.00	0.00	0.00	0.00	371,963.16	371,963.16
Grand Total							
	Scheduled	0.00	123,926.53	743,168.41	2,910,252.85	2,614,344.97	6,391,692.77

Recycler RF Post RRF CR007 CAP

Control Account		FY12	FY13	FY14	FY15	FY16	Cumulative
A1302.01.04.01 Recylcer AIP Oversight - FY13							
	Scheduled	0.00	24,910.17	0.00	0.00	0.00	24,910.17
A1302.01.04.02 Recylcer AIP Oversight - FY14							
	Scheduled	0.00	0.00	116,046.75	0.00	0.00	116,046.75
A1302.01.04.03 Recylcer AIP Oversight - FY15							
	Scheduled	0.00	0.00	0.00	95,214.68	0.00	95,214.68
A1302.01.04.04 Recylcer AIP Oversight - FY16							
	Scheduled	0.00	0.00	0.00	0.00	113,927.23	113,927.23
A1302.02.01 Recycler Cavities & Power Amplifiers							
	Scheduled	0.00	99,016.36	627,121.66	2,806,143.51	1,470,334.11	5,002,615.64
A1302.02.02 Recycler RF Cooling							
	Scheduled	0.00	0.00	0.00	4,956.66	486,151.32	491,107.99
A1302.02.03 Recycler Low Level RF							
	Scheduled	0.00	0.00	0.00	3,937.99	171,969.15	175,907.14
A1302.02.04 Recycler RF Installation							
	Scheduled	0.00	0.00	0.00	0.00	371,963.16	371,963.16
A1302.02.05 8kW 2.4 Mhz RF Cavity System							
	Scheduled	0.00	0.00	0.00	0.00	831,558.88	831,558.88
Grand Total							
	Scheduled	0.00	123,926.53	743,168.41	2,910,252.85	3,445,903.85	7,223,251.65