Muon Campus AIP

Change Request Form

CR#: DR002

1) DATE: 6/20/14	2)WBS: DR1	3) Originator: Ken Domann KAD

4)WBS Description of Primary Affected Tasks: Delivery Ring AIP

5) Technical Description & Primary Motivation for Change: This Change Request for the Delivery Ring AIP documents the overall replan of the schedule and the acceleration of work scope in certain areas. The net effect is to finish in FY16 vs FY17 which will save money because of the shorter time spent managing the project. The replanning was necessitated by the late approval of the Project Plan. Much of the up front work is weather sensitive and was not performed as planned. Finally, some scope was added.

The net effect is to increase the Delivery Ring budget by $~~162.3K~~ #164.8K. KAD 6/30/14

Accelerated work includes the injection kicker controls and the flourinert cooling system which will be done earlier to coincide with available manpower. In addition, the funding of magnets produced by the Technical Division was changed in order to make the magnet production more efficient across projects. The Technical Division will be building and refurbishing magnets on their internal "work in process" codes or WIP codes. This allows the work to efficiently progress on a line of magnets independent of the funding profile of the projects. The projects then purchase the finished magnets when their funding is available.

Scope added to the Delivery Ring AIP includes:
1. Removal of the cryo heat exchanger near the ceiling of the AP30 service building.
2. Filling in a portion of the floor trench in the AP30 service building.
3. Removal of the D/A beam line.
4. Installing new fiber optic cable between AP30 and AP0.

6) Assessment of Cost Impact (Use attachments if needed): See above analysis of cost impact. See Attachments for budget changes

7) Assessment of Schedule Impact (Use attachments if needed): Certain elements in the Delivery Ring schedule have been rescheduled. See the write up in section 5 for more information.

8) Secondary Impact & Other Comments: N/A

9) Approvals:

AIP Project Manager: Gerald Ginnala **Date:** 6/20/14

AIP Project Coordinator: Mary E **Date:** 6/20/14

AD Div Director: SNagaitsev 11291 **Date:** 6/20/14

Directorate: SNagaitsev 11291 **Date:** 6/20/14

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AIP Project Coordinator: Mary E **Date:** 6/20/14

AD Div Director: SNagaitsev 11291 **Date:** 6/20/14

Directorate: SNagaitsev 11291 **Date:** 6/20/14

Delivery Ring Pre CR002

6/20/2014

Control Account	Baseline		Actual		Forecast		CAM	
	Start	Finish	Start	Finish	Start	Finish	WBS	
Work Package	Cost Set	FY12	FY13	FY14	FY15	FY16	FY17	Cumulative
A1304.01.02.02 Delivery Ring Proj Mgmt OS - FY14	10/28/13	9/19/14	10/28/13		10/28/13	9/19/14		
	Scheduled	0.00	0.00	201.33	0.00	0.00	0.00	201.33
A1304.01.02.03 Delivery Ring Proj Mgmt OS - FY15	9/22/14	9/21/15			9/22/14	9/21/15		
	Scheduled	0.00	0.00	5.64	200.65	0.00	0.00	206.28
A1304.01.02.04 Delivery Ring Proj Mgmt OS - FY16	9/22/15	9/21/16			9/22/15	9/21/16		
	Scheduled	0.00	0.00	0.00	5.76	205.92	0.00	211.67
A1304.01.02.05 Delivery Ring Proj Mgmt OS - FY17	9/22/16	6/30/17			9/22/16	6/30/17		
	Scheduled	0.00	0.00	0.00	0.00	3.80	104.36	108.16
A1304.02 Collider Equip Removal & Config	10/28/13	12/11/14	10/28/13		10/28/13	12/11/14		
	Scheduled	0.00	0.00	239.19	57.76	0.00	0.00	296.95
A1304.03 Delivery Ring Electrical Infrastructure	1/7/14	1/7/16			1/7/14	1/7/16		
	Scheduled	0.00	0.00	351.51	50.94	69.65	0.00	472.09
A1304.04 Delivery Ring Controls	10/28/13	8/1/14	10/28/13		10/28/13	8/1/14		
	Scheduled	0.00	0.00	333.31	0.00	0.00	0.00	333.31
A1304.05 Delivery Ring Instrumentation	10/1/15	3/11/16			10/1/15	3/11/16		
	Scheduled	0.00	0.00	0.00	0.00	211.45	0.00	211.45
A1304.06.01.01 Septa Supplies	8/15/14	8/1/16			8/15/14	8/1/16		
	Scheduled	0.00	0.00	8.59	648.53	77.81	0.00	734.94
A1304.06.01.02 Inj Kicker Power Supply	7/18/14	2/10/17			7/18/14	2/10/17		
	Scheduled	0.00	0.00	96.71	498.29	469.89	147.48	1,212.37
A1304.06.01.03 Abort Kicker Power Supply	7/18/14	10/28/16			7/18/14	10/28/16		
	Scheduled	0.00	0.00	80.17	497.17	526.38	12.19	1,115.91
A1304.06.02 New DC Supplies	10/1/15	9/8/16			10/1/15	9/8/16		
	Scheduled	0.00	0.00	0.00	0.00	404.35	0.00	404.35
A1304.07.01 Delivery Ring Repurposed Magnets	10/1/15	11/11/15			10/1/15	11/11/15		
	Scheduled	0.00	0.00	0.00	0.00	16.53	0.00	16.53
A1304.07.02 Delivery Ring Inj C Magnet	10/1/14	2/15/16			10/1/14	2/15/16		
	Scheduled	0.00	0.00	0.00	107.77	80.55	0.00	188.32
A1304.07.03 Del Ring Inj Kicker Mag Refurbish	10/1/15	8/29/16			10/1/15	8/29/16		
	Scheduled	0.00	0.00	0.00	0.00	81.47	0.00	81.47
A1304.07.04 Del Ring Magnetic Septa Mags (1 spare)	10/1/15	12/27/16			10/1/15	12/27/16		
	Scheduled	0.00	0.00	0.00	0.00	253.54	36.61	290.16
A1304.08.01 Tunnel Installation	10/1/15	5/12/17			10/1/15	5/12/17		
	Scheduled	0.00	0.00	0.00	0.00	626.25	203.81	830.06
A1304.08.02 Cable Installation	10/1/15	2/28/17			10/1/15	2/28/17		
	Scheduled	0.00	0.00	0.00	0.00	129.37	56.46	185.83
Grand Total								
	Scheduled	0.00	0.00	1,316.45	2,066.85	3,156.98	560.91	7,101.19

Delivery Ring Post CR002

6/20/2014

Control Account		FY12	FY13	FY14	FY15	FY16	FY17	Cumulative
A1304.01.02.02 Delivery Ring Proj Mgmt OS - FY14								
	Scheduled	0.00	0.00	201.33	0.00	0.00	0.00	201.33
A1304.01.02.03 Delivery Ring Project Management Oversight - FY15								
	Scheduled	0.00	0.00	5.61	200.67	0.00	0.00	206.28
A1304.01.02.04 Delivery Ring Project Management Oversight - FY16								
	Scheduled	0.00	0.00	0.00	5.60	206.08	0.00	211.68
A1304.02 Collider Equipment Removal & Configuration								
	Scheduled	0.00	0.00	284.38	57.76	0.00	0.00	342.14
A1304.03 Delivery Ring Electrical Infrastructure								
	Scheduled	0.00	0.00	308.57	77.82	82.29	0.00	468.68
A1304.04 Delivery Ring Controls								
	Scheduled	0.00	0.00	336.70	57.25	2.83	0.00	396.78
A1304.05 Delivery Ring Instrumentation								
	Scheduled	0.00	0.00	0.00	0.00	213.20	0.00	213.20
A1304.06.01.01 Septa Supplies								
	Scheduled	0.00	0.00	8.59	648.79	77.55	0.00	734.93
A1304.06.01.02 Inj Kicker Power Supply								
	Scheduled	0.00	0.00	226.47	682.78	283.91	0.00	1,193.16
A1304.06.01.03 Abort Kicker Power Supply								
	Scheduled	0.00	0.00	81.74	586.04	449.77	0.00	1,117.55
A1304.06.02 New DC Supplies								
	Scheduled	0.00	0.00	0.00	0.00	405.23	0.00	405.23
A1304.07.01 Delivery Ring Repurposed Magnets								
	Scheduled	0.00	0.00	0.00	0.00	16.53	0.00	16.53
A1304.07.02 Delivery Ring Inj C Magnet								
	Scheduled	0.00	0.00	8.15	8.18	249.74	0.00	266.06
A1304.07.03 Delivery Ring Inj Kicker Magnet Refurbishment								
	Scheduled	0.00	0.00	1.50	0.00	88.96	0.00	90.46
A1304.07.04 Delivery Ring Magnetic Septa Magnets (1 spare)								
	Scheduled	0.00	0.00	0.00	0.00	389.88	0.00	389.88
A1304.08.01 Tunnel Installation								
	Scheduled	0.00	0.00	0.00	0.00	825.17	0.00	825.17
A1304.08.02 Cable Installation								
	Scheduled	0.00	0.00	0.00	0.00	184.47	0.00	184.47
Grand Total								
	Scheduled	0.00	0.00	1,463.04	2,324.88	3,475.60	0.00	7,263.52

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Delivery Ring CR002 Hours Delta

6/20/2014

UID	WBS	CTC	Name/Resource	Replan Hours	Current Hours	Delta Hours	Comments
1	**DR1**		**Delivery Ring AIP**	**27,536**	**30551**	**-3,015**	
2	**DR1.01**		**Delivery Ring Project Management**	**3,129**	**3639**	**-510**	
5	**DR1.01.02**		**Delivery Ring Project Management Oversight**	**3,129**	**3639**	**-510**	
12	DR1.01.02.04	A1304.01.02.05	Delivery Ring Project Management Oversight - FY17	0	510	-510	Deleted task
			FNAD_ENGNRING_PHYST	0	440	-440	
			FNAD_AC_EXP_PHYST	0	70	-70	
13	**DR1.02**		**Collider Equipment Removal & Configuration**	**2,111**	**1956**	**155**	
370	**DR1.02.01**		**Collider Equipment Removal**	**1,248**	**1112**	**136**	
358	**DR1.02.01.02**		**Collider Equipment Removal Implementation**	**1,018**	**882**	**136**	
481	DR1.02.01.02.10	A1304.02	Remove D/A Line	136	0	136	New task
			FNAD_MECH_SYSTM_TECH	120	0	120	
			FNAD_ELEC_TECH	16	0	16	
27	**DR1.02.02**		**AP30 Service Bldg Cryo Room Reconfiguration**	**863**	**844**	**19**	
360	**DR1.02.02.02**		**AP30 Svc Bldg Cryo Room Reconfiguration Implementation**	**653**	**634**	**19**	
466	DR1.02.02.02.06	A1304.02	Remove AP30 heat exchanger	19	0	19	New task
			FNAD_MECH_ASMBY_TECH	8	0	8	
			FNAD_MECH_TASK_MNGR	11	0	11	
35	**DR1.03**		**Delivery Ring Electrical Infrastructure**	**814**	**640**	**174**	
373	**DR1.03.02**		**Delivery Ring Electrical Infrastructure Implementation**	**664**	**490**	**174**	
62	DR1.03.02.02	A1304.03	Procure electrical components for AP-50	8	0	8	
			FNAD_ELEC_DESIGN_EN	8	0	8	
402	DR1.03.02.03	A1304.03	Prep Req & Process PO for Elect Components for AP-30	8	0	8	
			FNAD_ELEC_DESIGN_EN	8	0	8	
64	DR1.03.02.06	A1304.03	Procure cable tray components for AP-30	8	0	8	
			FNAD_ENGNRING_PHYST	8	0	8	
68	DR1.03.02.08	A1304.03	Electrical decommissioning in AP-30	150	0	150	
			FNAD_ELEC_TECH	150	0	150	
36	**DR1.04**		**Delivery Ring Controls**	**1,059**	**1017**	**42**	
352	**DR1.04.02**		**Delivery Ring Controls Implementation**	**544**	**502**	**42**	
475	DR1.04.02.17	A1304.04	Procure innerduct and fiber for AP0 controls	8	0	8	New task
			FNAD_CTRL_SYSTM_EN	8	0	8	
477	DR1.04.02.19	A1304.04	Install interlock endcap equipment at AP0	14	0	14	New task
			FNAD_INTERLOCK_EN	2	0	2	
			FNAD_INTERLOCK_TECH	12	0	12	
501	DR1.04.02.21	A1304.04	Cable Pull to APO Oversight	20	0	20	New task
			FNAD_ENGNRING_PHYST	20	0	12	
69	**DR1.05**		**Delivery Ring Instrumentation**	**1,320**	**1304**	**16**	
90	**DR1.05.02**		**Instrumentation Implementation**	**341**	**325**	**16**	
279	DR1.05.02.05	A1304.05	Delivery Ring BPM Electronics purchases	8	0	8	
			FNAD_ELEC_TECH	8	0	8	

Delivery Ring CR002 Hours Delta

6/20/2014

UID	WBS	CTC	Name/Resource	Replan Hours	Current Hours	Delta Hours	Comments
275	DR1.05.02.08	A1304.05	Delivery Ring BLM Electronics purchases	8	0	8	
			FNAD_ELEC_TECH	8	0	8	
70	**DR1.06**		**Delivery Ring PS**	**14,530**	**14536**	**-6**	
73	**DR1.06.01**		**Delivery Ring Pulsed Supplies**	**12,680**	**12694**	**-14**	
87	**DR1.06.01.02**		**Inj Kicker PS**	**5,022**	**5072**	**-50**	
112	**DR1.06.01.02.03**		**Inj Kicker PS Implementation**	**4,334**	**4384**	**-50**	
468	DR1.06.01.02.03.01	A1304.06.01.02	Inj Kicker PS Early controls development	400	0	400	New task
			FNAD_ELEC_TECH	400	0	400	
134	DR1.06.01.02.03.26	A1304.06.01.02	Inj Kicker PS Assemble Other Controls	281	731	-450	
			FNAD_ELEC_TECH	106	556	-450	
88	**DR1.06.01.03**		**Abort Kicker PS**	**4,572**	**4536**	**36**	
143	**DR1.06.01.03.01**		**Abort Kicker PS Design**	**688**	**668**	**20**	
145	DR1.06.01.03.01.03	A1304.06.01.03	Abort Kicker PS Resonant Charge Design Change for g-2	180	160	20	
			FNAD_ELEC_DRAFTER	20	0	20	
148	**DR1.06.01.03.02**		**Abort Kicker PS Implementation**	**3,884**	**3868**	**16**	
470	DR1.06.01.03.02.01	A1304.06.01.03	Abort Kicker PS early controls development	400	0	400	New task
			FNAD_ELEC_TECH	400	0	400	
424	DR1.06.01.03.02.02	A1304.06.01.03	Abort Kicker PS Prep Req & Process PO for Thyratron & PFL Cable & Frame	54	38	16	
			FNAD_MECH_DESIGN_EN	16	0	16	
163	DR1.06.01.03.02.20	A1304.06.01.03	Abort Kicker PS Assemble Other Controls	331	731	-400	
			FNAD_ELEC_TECH	156	556	-400	
74	**DR1.06.02**		**New DC Supplies**	**1,850**	**1842**	**8**	
228	**DR1.06.02.02**		**New DC Supplies Implementation**	**1,658**	**1650**	**8**	
257	**DR1.06.02.02.05**		**AP-30 Shunts Implementation**	**584**	**576**	**8**	
442	DR1.06.02.02.05.01	A1304.06.02	Prep Req & Process PO for Components for AP-30 shunts	8	0	8	
			FNAD_ELEC_TECH	8	0	8	
75	**DR1.07**		**Delivery Ring Magnets**	**667**	**3553**	**-2,886**	
77	**DR1.07.02**		**Delivery Ring Inj C Magnet (1)**	**102**	**1244**	**-1,142**	
178	**DR1.07.02.01**		**Inj C Magnet Design**	**92**	**478**	**-386**	
174	DR1.07.02.01.02	A1304.07.02	Specify C-Magnet	12	16	-4	
			FNTD_MAGNT_SCIENTIST	0	2	-2	
			FNTD_MAGNT_DESIGN_EN	0	2	-2	
175	DR1.07.02.01.03	A1304.07.02	Design C-Magnet	20	126	-106	
			FNTD_MAGNT_SCIENTIST	0	22	-22	
			FNTD_MAGNT_DESIGN_EN	0	84	-84	
177	DR1.07.02.01.04	A1304.07.02	C-Magnet construction plan	0	276	-276	Deleted task
			FNTD_PRJ_CTRL_SPCLST	0	58	-58	
			FNTD_MECH_DRAFTER	0	218	-218	
179	**DR1.07.02.02**		**Inj C Magnet Implementation**	**10**	**766**	**-756**	
180	DR1.07.02.02.01	A1304.07.02	Oversight of C-magnet procurement & fabrication.	10	206	-196	

Delivery Ring CR002 Hours Delta

UID	WBS	CTC	Name/Resource	Replan Hours	Current Hours	Delta Hours	Comments
			FNTD_ENGNRING_PHYST	0	42	-42	
			FNTD_MAGNT_DESIGN_EN	0	125	-125	
			FNTD_PRJ_CTRL_SPCLST	0	29	-29	
181	DR1.07.02.02.02	A1304.07.02	Inj C Magnet Acquire Tooling	0	10	-10	Deleted task
			FNTD_MECH_ASMBY_TECH	0	10	-10	
186	DR1.07.02.02.07	A1304.07.02	Inj C Magnet Wind & pot coils	0	322	-322	Deleted task
			FNTD_MECH_ASMBY_TECH	0	322	-322	
187	DR1.07.02.02.08	A1304.07.02	Assemble C-magnet	0	144	-144	Deleted task
			FNTD_MECH_ASMBY_TECH	0	144	-144	
188	DR1.07.02.02.09	A1304.07.02	Bus & manifold C-magnet	0	64	-64	Deleted task
			FNTD_MECH_ASMBY_TECH	0	64	-64	
189	DR1.07.02.02.10	A1304.07.02	Inj C Magnet Final inspection	0	4	-4	Deleted task
			FNTD_MECH_ASMBY_TECH	0	4	-4	
190	DR1.07.02.02.11	A1304.07.02	Inj C Magnet Measure & survey	0	16	-16	Deleted task
			FNTD_MECH_SYSTM_TECH	0	4	-4	
			FNPD_METROLOGIST	0	12	-12	
79	**DR1.07.03**		**Delivery Ring Inj Kicker Magnet Refurbishment (2 production)**	**453**	**438**	**15**	
211	**DR1.07.03.02**		**Delivery Ring Inj Kicker Magnet Implementation**	**253**	**238**	**15**	
444	DR1.07.03.02.02	A1304.07.03	Delivery Ring Inj Kicker Prep Req & Process PO for bus, capacitors & other parts	15	0	15	
			FNAD_ENGNRING_PHYST	15	0	15	
81	**DR1.07.04**		**Del Ring Magnetic Septa Mags (2)**	**12**	**1771**	**-1759**	
192	**DR1.07.04.01**		**Delivery Ring Magnetic Septa Magnets Design**	**12**	**16**	**-4**	
193	DR1.07.04.01.01	A1304.07.04	Delivery Ring Magnetic Septa Accept specifications	4	8	-4	
			FNTD_MAGNT_SCIENTIST	0	4	-4	
194	**DR1.07.04.02**		**DR Mag Septa Magnets Final Design**	**0**	**466**	**-466**	**Deleted task**
199	DR1.07.04.02.01	A1304.07.04	Delivery Ring Magnetic Septa Design magnet	0	46	-46	Deleted task
			FNTD_MAGNT_DESIGN_EN	0	34	-34	
			FNTD_MAGNT_SCIENTIST	0	12	-12	
198	DR1.07.04.02.02	A1304.07.04	Delivery Ring Magnetic Septa Create parts list	0	10	-10	Deleted task
			FNTD_MAGNT_DESIGN_EN	0	10	-10	
197	DR1.07.04.02.03	A1304.07.04	Delivery Ring Magnetic Septa Create drawings	0	186	-186	Deleted task
			FNTD_MAGNT_DESIGN_EN	0	20	-20	
			FNTD_MECH_DRAFTER	0	166	-166	
196	DR1.07.04.02.04	A1304.07.04	Delivery Ring Magnetic Septa Project Management	0	44	-44	Deleted task
			FNTD_PRJ_CTRL_SPCLST	0	44	-44	
195	DR1.07.04.02.05	A1304.07.04	Delivery Ring Magnetic Septa EDIA	0	180	-180	Deleted task
			FNTD_MAGNT_SCIENTIST	0	16	-16	
			FNTD_MAGNT_DESIGN_EN	0	76	-76	
			FNTD_PRJ_CTRL_SPCLST	0	60	-60	
			FNTD_MECH_DRAFTER	0	28	-28	

Delivery Ring CR002 Hours Delta

6/20/2014

UID	WBS	CTC	Name/Resource	Replan Hours	Current Hours	Delta Hours	Comments
200	**DR1.07.04.03**		**Delivery Ring Magnetic Septa Magnets Implementation**	**0**	**1289**	**-1289**	
201	DR1.07.04.03.01	A1304.07.04	Delivery Ring Magnetic Septa Acquire tooling	0	30	-30	Deleted task
			FNTD_MAGNT_DESIGN_EN	0	30	-30	
404	DR1.07.04.03.02	A1304.07.04	Prep Req & Process PO for Del Ring Magnetic Septa Material	0	24	-24	Deleted task
			FNTD_MAGNT_DESIGN_EN	0	24	-24	
208	DR1.07.04.03.05	A1304.07.04	Delivery Ring Magnetic Septa Prepare laminations	0	196	-196	Deleted task
			FNTD_MECH_ASMBY_TECH	0	180	-180	
			FNTD_MAGNT_DESIGN_EN	0	16	-16	
207	DR1.07.04.03.06	A1304.07.04	Delivery Ring Magnetic Septa Assemble magnet	0	765	-765	Deleted task
			FNTD_MECH_ASMBY_TECH	0	740	-740	
			FNTD_MAGNT_DESIGN_EN	0	25	-25	
206	DR1.07.04.03.07	A1304.07.04	Delivery Ring Magnetic Septa Test & certify magnet	0	104	-104	Deleted task
			FNTD_MECH_ASMBY_TECH	0	64	-64	
			FNTD_MAGNT_DESIGN_EN	0	40	-40	
205	DR1.07.04.03.08	A1304.07.04	Delivery Ring Magnetic Septa Document	0	56	-56	Deleted task
			FNTD_MECH_ASMBY_TECH	0	16	-16	
			FNTD_MAGNT_DESIGN_EN	0	40	-40	
204	DR1.07.04.03.09	A1304.07.04	Delivery Ring Magnetic Septa Fiducialize	0	16	-16	Deleted task
			FNPD_METROLOGIST	0	40	-40	
203	DR1.07.04.03.10	A1304.07.04	Delivery Ring Magnetic Septa Project Controls Support	0	40	-40	Deleted task
			FNTD_PRJ_CTRL_SPCLST	0	40	-40	
202	DR1.07.04.03.11	A1304.07.04	Delivery Ring Magnetic Septa Oversight	0	58	-58	Deleted task
			FNTD_ENGNRING_PHYST	0	58	-58	

Delivery Ring CR002 Material Cost Delta

6/20/2014

UID	WBS	CTC	Name	Replan M&S	Current M&S	Delta M&S	Comments
1	**DR1**		**Delivery Ring AIP**	**$3,099,932**	**$2,678,857**	**$421,075**	
2	**DR1.01**		**Delivery Ring Project Management**	**$102,000**	**$120,000**	**-$18,000**	
5	**DR1.01.02**		**Delivery Ring Project Management Oversight**	**$102,000**	**$120,000**	**-$18,000**	
12	DR1.01.02.04	A1304.01.02.05	Delivery Ring Project Management Oversight - FY17	$0	$18,000	-$18,000	Deleted task
13	**DR1.02**		**Collider Equipment Removal & Configuration**	**$91,094**	**$69,094**	**$22,000**	
370	**DR1.02.01**		**Collider Equipment Removal**	**$40,844**	**$39,844**	**$1,000**	
358	**DR1.02.01.02**		**Collider Equipment Removal Implementation**	**$40,844**	**$39,844**	**$1,000**	
481	DR1.02.01.02.10	A1304.02	Remove D/A Line	$1,000	$0	$1,000	New task
27	**DR1.02.02**		**AP30 Service Bldg Cryo Room Reconfiguration**	**$50,250**	**$29,250**	**$21,000**	
360	**DR1.02.02.02**		**AP30 Svc Bldg Cryo Room Reconfiguration Implementation**	**$50,250**	**$29,250**	**$21,000**	
465	DR1.02.02.02.05	A1304.02	Support trench cover in AP30 floor	$6,000	$0	$6,000	New task
466	DR1.02.02.02.06	A1304.02	Remove AP30 heat exchanger	$15,000	$0	$15,000	New task
35	**DR1.03**		**Delivery Ring Electrical Infrastructure**	**$284,673**	**$303,673**	**-$19,000**	
373	**DR1.03.02**		**Delivery Ring Electrical Infrastructure Implementation**	**$284,673**	**$303,673**	**-$19,000**	
68	DR1.03.02.08	A1304.03	Electrical decommissioning in AP-30	$19,000	$38,000	-$19,000	
36	**DR1.04**		**Delivery Ring Controls**	**$217,765**	**$172,000**	**$45,765**	
352	**DR1.04.02**		**Delivery Ring Controls Implementation**	**$217,765**	**$172,000**	**$45,765**	
475	DR1.04.02.17	A1304.04	Procure innerduct and fiber for AP0 controls	$6,152	$0	$6,152	New task
476	DR1.04.02.18	A1304.04	Pull innerduct and fiber to AP0	$35,000	$0	$35,000	New task
480	DR1.04.02.20	A1304.04	Procure Safety System end cap hardware for AP0 and MC-1	$4,613	$0	$4,613	New task
75	**DR1.07**		**Delivery Ring Magnets**	**$498,000**	**$107,690**	**$390,310**	
77	**DR1.07.02**		**Delivery Ring Inj C Magnet**	**$195,000**	**$36,690**	**$158,310**	
179	**DR1.07.02.02**		**Inj C Magnet Implementation**	**$195,000**	**$36,690**	**$158,310**	
182	DR1.07.02.02.03	A1304.07.02	Inj C Magnet Acquire copper	$0	$2,000	-$2,000	Deleted task
183	DR1.07.02.02.04	A1304.07.02	Inj C Magnet Acquire steel	$0	$4,640	-$4,640	Deleted task
184	DR1.07.02.02.05	A1304.07.02	Inj C Magnet Acquire remaining material	$0	$8,250	-$8,250	Deleted task
185	DR1.07.02.02.06	A1304.07.02	Inj C Magnet Machine pole pieces	$0	$9,800	-$9,800	Deleted task
186	DR1.07.02.02.07	A1304.07.02	Inj C Magnet Wind & pot coils	$0	$12,000	-$12,000	Deleted task
490	DR1.07.02.02.10	A1304.07.02	Inj C Magnet Delivered by TD	$195,000	$0	$195,000	New task
81	**DR1.07.04**		**Delivery Ring Magnetic Septa Magnets (1 spare)**	**$303,000**	**$71,000**	**$232,000**	
200	**DR1.07.04.02**		**Delivery Ring Magnetic Septa Magnets Implementation**	**$303,000**	**$71,000**	**$232,000**	
499	DR1.07.04.02.09	A1304.07.04	DR Mag Septa Magnet Pulsed Septa Magnets Delivered by TD	$303,000	$0	$303,000	New task
201	DR1.07.04.03.01	A1304.07.04	Delivery Ring Magnetic Septa Acquire tooling	$0	$19,000	-$19,000	Deleted task
209	DR1.07.04.03.04	A1304.07.04	Receive Del Ring Magnetic Septa Material	$0	$52,000	-$52,000	Deleted task