# Muon Campus AIP

# Change Request Form

**CR#:BT005**

| 1) DATE: 7/29/14 | 2)WBS: BT1 | 3) Originator: Ken Domann KAD |
|---|---|---|

**4) WBS Description of Primary Affected Tasks: Beam Transport AIP**

**5) Technical Description & Primary Motivation for Change:** This change request documents the effect of adjustments to the burden and indirect rates as directed by the finance group. The result is an increase of $75,293 to the Beam Transport AIP budget with the corresponding reduction in contingency.

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

**7) Assessment of Schedule Impact (Use attachments if needed):** N/A

**8) Secondary Impact & Other Comments:** N/A

**9) Approvals:**

| | | |
|---|---|---|
| **AIP Project Manager:** | | **Date:** 08/05/14 |
| **AIP Project Coordinator:** | | **Date:** 8/5/14 |
| **AD Div Director:** | S Nagaitsev 11291 | **Date:** 8/05/14 |
| **Directorate:** | S Nagaitsev 11291 | **Date:** 8/05/14 |

# Beam Transport Pre CR005 CAP

| CTC | | FY12 | FY13 | FY14 | FY15 | FY16 | Cumulative |
|---|---|---|---|---|---|---|---|
| A1303.01.02.01 Project Management Oversight FY13 | | | | | | | |
| | Scheduled | 0.00 | 56,415.81 | 0.00 | 0.00 | 0.00 | 56,415.81 |
| A1303.01.02.02 Project Management Oversight FY14 | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 138,609.81 | 0.00 | 0.00 | 138,609.81 |
| A1303.01.02.03 Project Management Oversight FY15 | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 3,286.94 | 137,550.94 | 0.00 | 140,837.89 |
| A1303.01.02.04 Project Management Oversight FY16 | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 0.00 | 2,493.82 | 34,519.82 | 37,013.64 |
| A1303.02.01 Beam Transport Lambertson (MLAW) Magnet | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 292,629.56 | 0.00 | 0.00 | 292,629.56 |
| A1303.02.02.01 Beam Transport Extraction Kicker Magnets (RKB 2) | | | | | | | |
| | Scheduled | 0.00 | 6,218.93 | 163,023.76 | 0.00 | 0.00 | 169,242.68 |
| A1303.02.02.02 Beam Transport Extraction Kicker Power Supplies | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 32,213.32 | 361,806.88 | 80,358.19 | 474,378.39 |
| A1303.02.02.03 Beam Transport Kicker Loads & Cooling System | | | | | | | |
| | Scheduled | 0.00 | 6,218.93 | 386,463.95 | 36,833.77 | 0.00 | 429,516.65 |
| A1303.02.02.04 Beam Transport Recycler Ring Extraction Insert Installa | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 421,851.45 | 182,970.08 | 200,200.87 | 805,022.40 |
| A1303.03.01.01 RR to P1 Vertical Bending Dipole ADCW (1) | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 24,275.42 | 0.00 | 0.00 | 24,275.42 |
| A1303.03.01.02 RR to P1 Permanent Magnets RQA (4) | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 0.00 | 57,942.13 | 0.00 | 57,942.13 |
| A1303.03.01.03 RR to P1 Trim Quad STQB (4+1) | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 157,416.15 | 0.00 | 0.00 | 157,416.15 |
| A1303.03.01.05 RR to P1 Vertical Dipole Correctors (1+1) | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 8,653.56 | 0.00 | 0.00 | 8,653.56 |
| A1303.03.02.01 RR to P1 Lambertson PS | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 49,642.98 | 10,722.22 | 0.00 | 60,365.20 |
| A1303.03.02.02 RR to P1 Vertical Magnet PS | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 49,642.98 | 10,722.22 | 0.00 | 60,365.20 |
| A1303.03.02.03 RR to P1 Trim Dipole PS(2) | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 25,999.21 | 0.00 | 0.00 | 25,999.21 |
| A1303.03.02.04 RR to P1 Trim Quad PS(4) | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 30,932.88 | 0.00 | 0.00 | 30,932.88 |
| A1303.03.03 Beam Transport RR to P1 Instrumentation | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 0.00 | 264,202.89 | 0.00 | 264,202.89 |
| A1303.03.04 Beam Transport RR to P1 Installation | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 0.00 | 463,649.94 | 0.00 | 463,649.94 |
| A1303.04.01.01.01 Beamline B2 Dipole Magnet (1) (V714 Replacement) | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 39,939.65 | 10,004.86 | 0.00 | 49,944.51 |
| A1303.04.01.01.02 Beamline Existing Magnets to be Repurposed | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 5,094.81 | 16,139.06 | 0.00 | 21,233.87 |
| A1303.04.01.01.03 Beamline CDA Magnet (F-17C Replacement) | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 1,139.37 | 40,865.65 | 0.00 | 42,005.02 |
| A1303.04.01.02 Beamline PS | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 13,360.06 | 211,707.25 | 0.00 | 225,067.32 |

# Beam Transport Pre CR005 CAP

| CTC | | FY12 | FY13 | FY14 | FY15 | FY16 | Cumulative |
|---|---|---|---|---|---|---|---|
| A1303.04.01.03 Beam Line Installation & Mechanical | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 84,783.65 | 372,204.99 | 0.00 | 456,988.64 |
| A1303.04.01.04 RR to AP-0 Target Station and RR to M3 Line optics | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 67,641.57 | 0.00 | 0.00 | 67,641.57 |
| A1303.04.02 Beam Transport Electrical Infrastructure | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 10,181.79 | 169,765.33 | 0.00 | 179,947.12 |
| A1303.04.03 Beamline Instrumentation & Controls | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 79,590.00 | 502,760.91 | 0.00 | 582,350.91 |
| Grand Total | | | | | | | |
| | Scheduled | 0.00 | 68,853.67 | 2,086,372.87 | 2,852,342.93 | 315,078.88 | 5,322,648.35 |

# Beam Transport Post CR005 CAP

| CTC | | FY12 | FY13 | FY14 | FY15 | FY16 | Cumulative |
|---|---|---|---|---|---|---|---|
| A1303.01.02.01 Project Management Oversight FY13 | | | | | | | |
| | Scheduled | 0.00 | 56,415.81 | 0.00 | 0.00 | 0.00 | 56,415.81 |
| A1303.01.02.02 Project Management Oversight FY14 | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 139,404.50 | 0.00 | 0.00 | 139,404.50 |
| A1303.01.02.03 Project Management Oversight FY15 | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 3,360.74 | 140,642.56 | 0.00 | 144,003.30 |
| A1303.01.02.04 Project Management Oversight FY16 | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 0.00 | 2,548.83 | 35,282.17 | 37,831.00 |
| A1303.02.01 Beam Transport Lambertson (MLAW) Magnet | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 295,983.41 | 0.00 | 0.00 | 295,983.41 |
| A1303.02.02.01 Beam Transport Extraction Kicker Magnets (RKB 2) | | | | | | | |
| | Scheduled | 0.00 | 6,218.93 | 163,023.76 | 0.00 | 0.00 | 169,242.68 |
| A1303.02.02.02 Beam Transport Extraction Kicker Power Supplies | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 32,213.32 | 368,709.96 | 81,794.30 | 482,717.58 |
| A1303.02.02.03 Beam Transport Kicker Loads & Cooling System | | | | | | | |
| | Scheduled | 0.00 | 6,218.93 | 389,354.87 | 37,790.01 | 0.00 | 433,363.81 |
| A1303.02.02.04 Beam Transport Recycler Ring Extraction Insert Installa | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 426,269.95 | 186,389.53 | 203,559.50 | 816,218.98 |
| A1303.03.01.01 RR to P1 Vertical Bending Dipole ADCW (1) | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 24,275.42 | 0.00 | 0.00 | 24,275.42 |
| A1303.03.01.02 RR to P1 Permanent Magnets RQA (4) | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 0.00 | 58,606.21 | 0.00 | 58,606.21 |
| A1303.03.01.03 RR to P1 Trim Quad STQB (4+1) | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 159,220.31 | 0.00 | 0.00 | 159,220.31 |
| A1303.03.01.05 RR to P1 Vertical Dipole Correctors (1+1) | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 8,653.56 | 0.00 | 0.00 | 8,653.56 |
| A1303.03.02.01 RR to P1 Lambertson PS | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 50,020.25 | 10,910.91 | 0.00 | 60,931.16 |
| A1303.03.02.02 RR to P1 Vertical Magnet PS | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 50,020.25 | 10,910.91 | 0.00 | 60,931.16 |
| A1303.03.02.03 RR to P1 Trim Dipole PS(2) | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 26,087.02 | 0.00 | 0.00 | 26,087.02 |
| A1303.03.02.04 RR to P1 Trim Quad PS(4) | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 30,932.88 | 0.00 | 0.00 | 30,932.88 |
| A1303.03.03 Beam Transport RR to P1 Instrumentation | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 0.00 | 267,802.03 | 0.00 | 267,802.03 |
| A1303.03.04 Beam Transport RR to P1 Installation | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 0.00 | 471,268.04 | 0.00 | 471,268.04 |
| A1303.04.01.01.01 Beamline B2 Dipole Magnet (1) (V714 Replacement) | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 39,771.00 | 9,847.54 | 0.00 | 49,618.54 |
| A1303.04.01.01.02 Beamline Existing Magnets to be Repurposed | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 5,094.81 | 16,429.91 | 0.00 | 21,524.72 |
| A1303.04.01.01.03 Beamline CDA Magnet (F-17C Replacement) | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 1,170.09 | 41,334.02 | 0.00 | 42,504.10 |
| A1303.04.01.02 Beamline PS | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 13,648.75 | 215,908.59 | 0.00 | 229,557.34 |

# Beam Transport Post CR005 CAP

| CTC | | FY12 | FY13 | FY14 | FY15 | FY16 | Cumulative |
|---|---|---|---|---|---|---|---|
| A1303.04.01.03 Beam Line Installation & Mechanical | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 86,450.74 | 378,582.06 | 0.00 | 465,032.80 |
| A1303.04.01.04 RR to AP-0 Target Station and RR to M3 Line optics | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 67,641.57 | 0.00 | 0.00 | 67,641.57 |
| A1303.04.02 Beam Transport Electrical Infrastructure | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 10,433.98 | 172,202.93 | 0.00 | 182,636.91 |
| A1303.04.03 Beamline Instrumentation & Controls | | | | | | | |
| | Scheduled | 0.00 | 0.00 | 81,699.13 | 513,837.44 | 0.00 | 595,536.57 |
| Grand Total | | | | | | | |
| | Scheduled | 0.00 | 68,853.67 | 2,104,730.31 | 2,903,721.47 | 320,635.97 | 5,397,941.42 |