



Mu2e

BASIS of ESTIMATE (BoE)

Date of Estimate: 01/03/2014
Revision Date: 07/11/2014

Prepared by: Chuck Worel
Contributing: Randy Zifko

Docdb #:3730

WBS number: 475.02.04.04.7

Control Account:475.02.04

WBS Title: Frisker Stations

WBS Dictionary Definition: New Electrical and Radiation Safety Interlock Systems for new Target, Transport, and Detector Hall and related areas. (This activity includes installation of Friskers, not specifically mentioned in the WBS definition)

Supporting Documents (including but not limited to):

- Excel spreadsheet - High lighted version of mu2e doc 4304 (TL mark up of Muon Campus Safety System Cost Estimate...xlsx, 68.9 kB)
- pdf - High lighted version of mu2e doc 4304 (TL mark up of Muon Campus Safety System Cost Estimate...xlsx, 68.9 kB)
- BOE review form (BOE_Review_475.02.04.04.7_20140904.docx, 2.1 MB)
- Copy of 8/21/14 BOE report (Copy of 2014 08 21 BOE Report 47502.xlsx, 3.8 MB)

Quality Control Process Applied by: A. Leveling

date: 9/5/14

Assumptions:

- BOE only covers activities from May 1st 2014 onward. Activities prior to May 1st 2014 are entered into the schedule as actuals with 0% contingency.
- Costs are in 2014 dollars and do not include indirects.
- Durations are in working days.
- 1 FTE = 1768 hours for an average year. P6 uses the actual calendar for each year with the exact number of workdays.

Details of the Base Estimate (explanation of the Work, Contingency and Duration)

The activities covered in this BoE include M&S purchases, procurement activities related to the M&S, and labor associated with installation and testing of the two Frisker Stations. M&S estimates along with labor estimates are based upon similar safety system installations.

Purchasing of components needed for the Frisker assemblies & delivery lead time of these components is not needed as the two Frisker Stations are repurposed from the decommissioned Tev.

Installation of the Frisker Stations for the Target & Detector Halls is done by Radiation Technicians after Target Hall & Detector Hall utilities (AC power, lighting & cable tray) are completed.

T&M Electrician time may be needed for the installation of 120 V AC power if Frisker Stations are not located near a power source.

Currently Assigned Personnel

Gary Lauten	Radiation Safety Officer
Paul Sedory	Radiation Technician
Dale White	Radiation Technician
Jim Ranson	Electrical T&M Manager

Task 47502.04.04.7.001000 Installation of Friskers

Install Frisker Stations for the Target Hall & Detector Hall. This activity includes installation of existing frisker units.

<i>Radiation Safety Officer</i>	1 hour	Estimate based upon previous experience of installations
<i>Radiation Technician</i>	8 hours	Estimate based upon previous experience of installations
<i>Radiation Technician</i>	1 hours	Estimate based upon previous experience of testing
<i>Electrical Task Manager</i>	2 hours	Estimate based upon previous experience of installations
<i>Electricians</i>	16 hours	Estimate based upon previous experience of installations
<i>Duration</i>	20 days	
<i>Estimate Type</i>	Advanced	Contingency of 25% based on rule L3

M&S Estimate Summary:

Item	Cost	Contingency	Contingency Rule	Comments
Procurement of components	0	20%	M3	Repurposed from Tev
T&M Electricians	16 hours	20%	M3	Similar installations

Labor Estimate Summary:

Resource	Hours	Contingency	Contingency Rule	Comments
Radiation Safety Officer	1	25%	L3	Gary Lauten
Radiation Technicians	9	25%	L3	Paul Sedory, Dale White
Electrical Task Manager	2	25%	L3	Jim Ranson