**MUSE Basis of Estimate**

**Element WBS #5**

I. General Information

Task Name: Labor for construction of LH2 target

Unique ID Number

Date of Estimate: 12/13/2015 Last update

Estimate Generator: Briscoe, Ransome

Cost Category:

  M&S

 XSWF

Comments:

Vendor Quote Number if Applicable:

Drawing Reference Number or Attachment:

Costing Method: Estimate based on past experience with similar projects

Total Task Cost: $652,295

Total Contingency: $176,567

II. Cost Estimate Breakdown

Cost of each element, along with justification

1 Post-Doc 2 years @ $60,000, 25.1% fringe ($15,060) , 52.5% F&A

 Total of $&65,060 + F&A $34,157 ($99,217) plus contingency of $22,820

2 Grad Students 2 years @28,000/year, 6.5% fringe ($1,820), 52.5% F&A

 Total of $59,640 + F&A $31,371 ($91,011) plus contingency of $20,932

External Labor (shops) $87,600 + F&A ($45,990), plus contingency of $30,726

III. Contingency and risk analysis

The primary risks are in delay of finding postdoc with appropriate skill set at start of project, having to pay the postdoc a higher salary. We estimate a contingency for this of 23%.

Salaries for grad students are well known and not anticipated to change significantly, however, the possibility of the project needing to retain this labor longer than anticipated may increase the cost. We estimate a contingency of 23%.

The Post-doc and Grad Student labor is partially shared with WBS 6. The ability to shift between the two projects eliminates some risk to both.

External labor contingency is estimated at 23%.

